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One Dollar a Year

MILL SUPPLIES

Vol. X

An Independent Monthly Journal Devoted to the Interests of the Jobbers and Manufacturers of Mill, Steam, Mine and Machinery Supplies

No. 9

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SEPTEMBER, 1920

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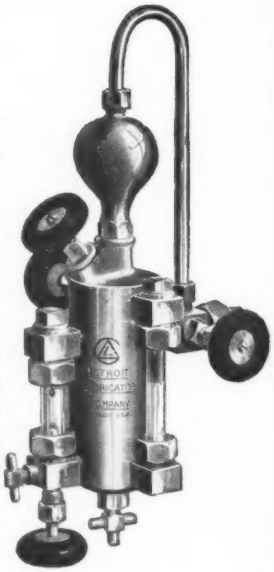
Efficient, Economical Dependable

lubrication for all kinds of reciprocating steam engines, steam pumps, etc., is assured with

"Detroit" Improved Standard Lubricators

They are made in both single and double connection styles with sizes ranging from 1/3 pint to 1 gal. All are carefully inspected, carefully tested and warranted to give satisfaction. Write for catalogue L-42, today.



DETROIT LUBRICATOR COMPANY
DETROIT, U.S.A.

GILBERT WOOD PULLEYS

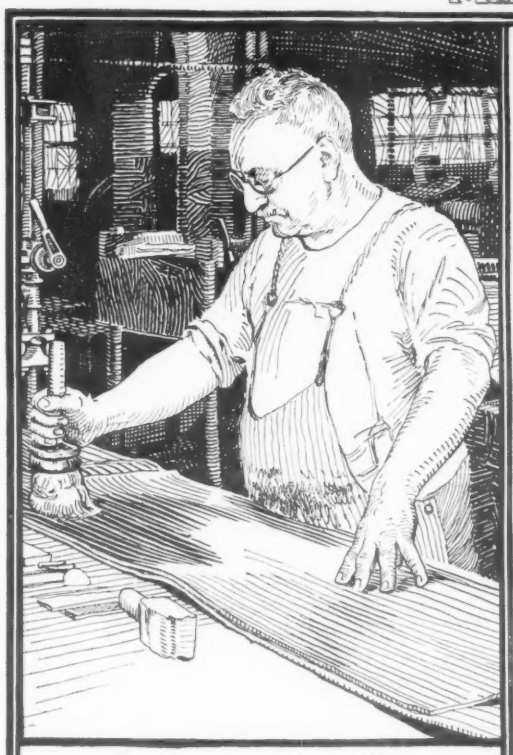
Sell Themselves

Design
Material
Workmanship
Finish
Reputation
Service

SAGINAW MANUFACTURING COMPANY
SAGINAW, MICHIGAN

Chicago Branch
105-9 South Jefferson Street

New York Branch
88 Warren Street



Cementing the laps and plies of Chicago Belting.

Leather Belting May Be Down · But It Is *Never* Out

(and it is rarely down)

EVERY good leather belt, regardless of its age or condition has a value not to be found in substitute belts. No matter how old or how worn, it still has years of useful life and retains an appreciable percentage of its original dollars and cents value. Old leather belting can be made into new belts—large belts cut into many smaller belts, and belts worn by years of service rebuilt. The belts thus made over or rebuilt are practically as good as new with a long and useful life still in them.

Years and years of service are built into every Reliance and Sea Lion (waterproof) and White Strip (extra strong) belt. Under the watchful and practical care of our sales and engineering service departments, Chicago beltings are establishing new records of efficiency and long life for our users. Costing more to manufacture, the first cost may be slightly higher, but they last so much longer that their economy in the long run is a matter of record in thousands of mills and shops.

This ability of Chicago "built-for-the-overload" belts to deliver more than we claim is a matter of personal pride to every member of both our manufacturing and sales organizations, and is back of the reputation which we have so long sustained as manufacturers of the highest quality leather belting on the market.

BY INVITATION MEMBER OF

Chicago Belting Company

Manufacturers of Leather Belting

NEW YORK PITTSBURG CLEVELAND ROCKFORD MILWAUKEE

119 NORTH GREEN STREET CHICAGO, U.S.A.

NEW ORLEANS LOS ANGELES SAN FRANCISCO PORTLAND, ORE. SEATTLE, WASH.

Chicago Leather Belting

Mr. Dealer:

Are you at loss to know what Brooms and Brushes to stock that we illustrate in our Catalog No. 17? We would recommend for your first order as follows:

Page 6

No. 9 Corn and Bamboo Fibre Mixed. Weight 33-34 pounds per dozen.

No. 99 Corn and Bamboo Fibre Mixed, Weight 35-36 pounds per dozen.

No. 10 Corn and Bamboo Fibre Mixed, Weight 38-39 pounds per dozen.

Page 16

No. 6 All Corn—weight 36 pounds per dozen.

No. 6C Corn and Bamboo Mixed, 36 pounds per dozen.

Page 32

No. 4 Beats All Whisk Broom.

Page 42

No. 170—16 inch Capital Floor Brush.

No. 171—18 inch Capital Floor Brush.

No. 172—24 inch Capital Floor Brush.

Page 43

No. 8 Bench Duster.

These are the class of brooms and brushes that the largest supply dealers in the United States are handling. A great many of these dealers have handled these goods, until they are now ordering in carload lots. You can do the same thing. We will co-operate with you in every way possible.

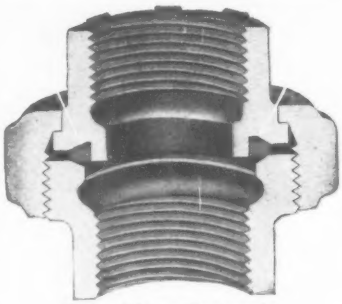
Write us for our Catalog and Net Prices if you do not have them.

Very truly,

Indianapolis Brush & Broom Mfg. Co.

Indianapolis, Indiana

P. S.—We would be pleased to send you a souvenir letter opener in case you wish one.



Made of Heavy Pattern Air Furnace Malleable Iron

"SATISFIED"

That Is What You Will Say After Trying

C. D. RAILROAD UNIONS

The Unions With the Brass Valve Seated Disc

NO GASKETS REQUIRED

DURABLE, ECONOMICAL AND SAFE

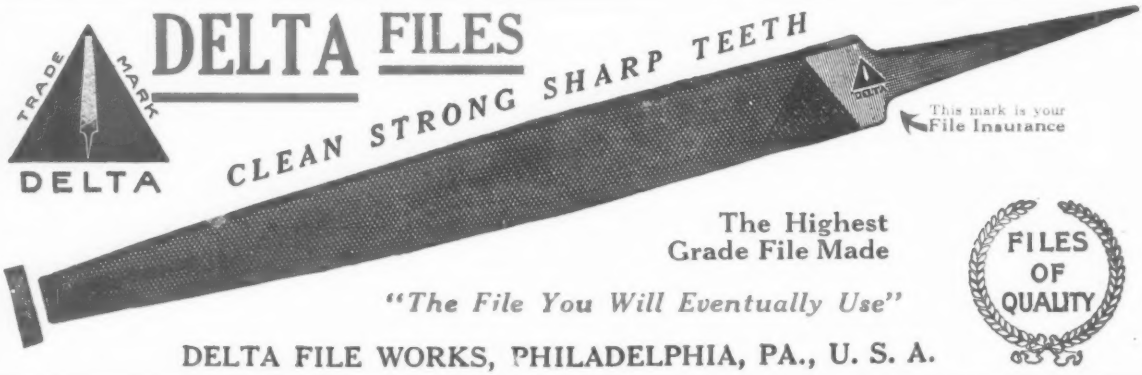
ILLINOIS MALLEABLE IRON CO., CHICAGO, ILL.

Manufacturers of a Complete Line of MALLEABLE AND CAST IRON PIPE FITTINGS Write for Catalogue

TRADE MARK DELTA

DELTA FILES

CLEAN STRONG SHARP TEETH



This mark is your File Insurance

The Highest Grade File Made

"The File You Will Eventually Use"

FILES OF QUALITY

DELTA FILE WORKS, PHILADELPHIA, PA., U. S. A.

Pioneer American Manufacturers

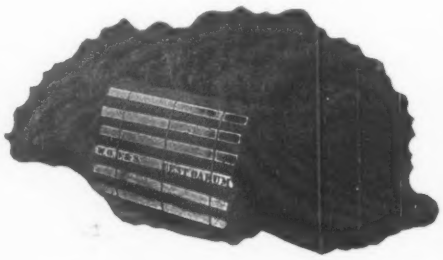
W. O. Davey & Sons

The Only Daveys in the Business

Friction Board and Oakum

70 Years of time-tested, time-proven QUALITY are back of every piece of goods bearing the DAVEY stamp

Davey's guarantee means satisfaction or your money back.



You are assured you are giving your customers the BEST when you sell them DAVEY'S goods. You protect yourself, at the same time, against "kicks" and "sore," dissatisfied trade. Try us with a sample order—your others will follow.

W. O. DAVEY & SONS, 164 Laidlaw Ave., Jersey City, N. J.

LEIGH H. DAVEY, Presiden E. S. DAVEY, Secretary Wm. O. DAVEY, Treasurer

"TOLEDO DIES

OHIO"

JUST THAT, NOTHING MORE.

YET THIS LETTER REACHED US FROM CALIFORNIA

Here is a little evidence that "Toledo Dies" and The Toledo Pipe Threading Machine Co. are pretty well known throughout the country. The envelope which is photographically reproduced, reached us on July 6th of last year, and it just now occurs to us to make it the subject of an advertisement in proof of the popularity of our product.

It pays to specialize on "Toledo Dies" and "Toledo" tools, because this means dies and tools of the highest efficiency in the thoughts of the great American public.

In other words, it takes the least selling effort to push "Toledo Dies" and "Toledo" tools across your counter; therefore, they are the best dies, and best tools for you to sell.

THE TOLEDO PIPE THREADING MACHINE CO.

TOLEDO, OHIO NEW YORK OFFICE: 50 CHURCH ST.

Mister Dealer

Please take a good look at this illustration.

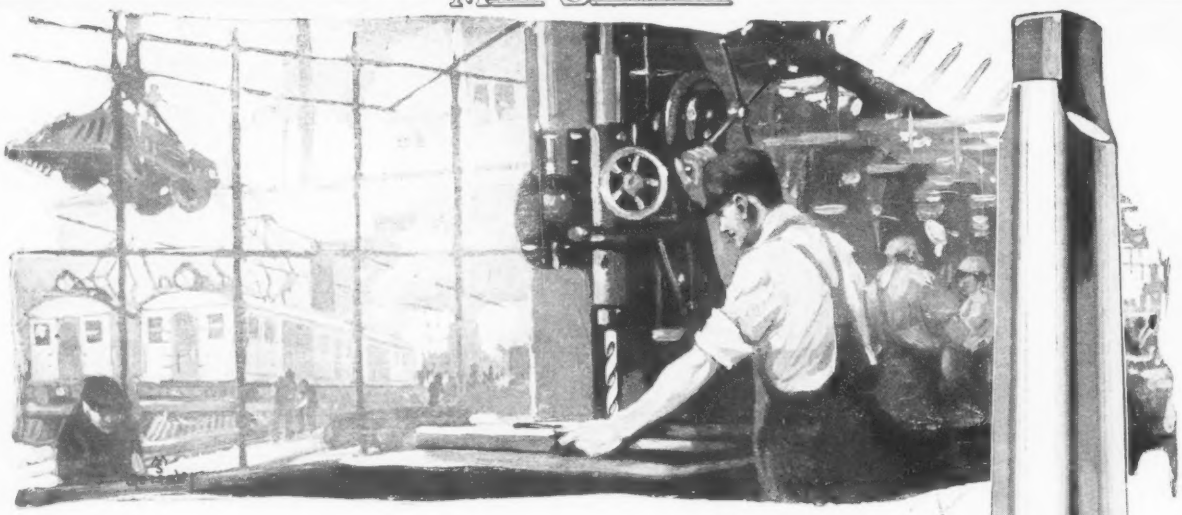
TRADE MARK REG.

U. S. PATENT OFFICE

It represents the Acme in Stitched Canvas Belting. "MOUNT VERNON"—the one Belt that can't be made better because we make it the best that can be made. It's a repeat order Belt, which means dollars to the dealer.

—— MAKERS ——

327-333 Warren Ave., *Mount Vernon Belting Company* Baltimore, Md.



Relation of Holes to Modern Marvel—The Electric Locomotive

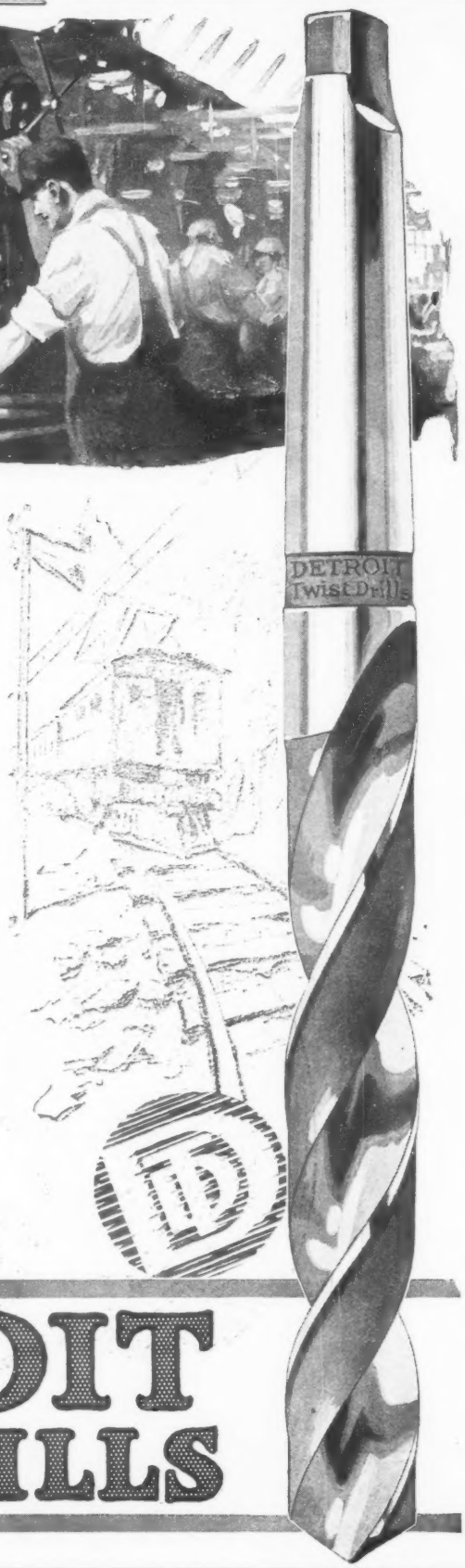
A glance at the construction of an electric locomotive—the *Z* bars and the angle irons—the center channels and the cross-sills—and the steel plates which form its structure—and the gusset plates, the knee braces and the rivets which strengthen its construction—will reveal the myriad accurate holes required to assemble it.

It is interesting to know that the importance of accurate drill holes is emphasized not only in our modern units of transportation, but also in almost every utility that contributes to any great extent to the comforts of our daily life.

And the manufacturers of electric locomotives, which must be built staunchly to resist effectively the continuous stresses from coupling, use Detroit Twist Drills because these drills give more accurate holes with less regrinding and with less cost for power.

Specify Detroit Twist Drills in Your Next Order for Drills

Detroit Twist Drill Company, Detroit, Mich.
New York Sales Office: 45 Warren Street



DETROIT TWIST DRILLS

Belt-killing Work!

-but TEST SPECIAL RUBBER BELTING endured it

After numerous belting troubles, the Tacony Steel Company of Philadelphia finally selected Test Special Rubber Belting for this belt-devouring drive—a hot saw cutting nickel chrome steel of great density and toughness.

—other belts lasted one month.
—Test Special Rubber Belting showed an average life of three months.

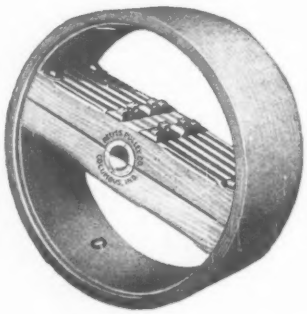
The conditions speak for themselves—a belt traveling over small pulleys at 5654 feet per minute—a sudden belt-racking strain when the saw bites into the steel—a shower of sparks and steel particles —BELT KILLING WORK. But Test Special proved its worth. And—consider this—it cost less than the other kind.

A sample of Test Special Belting with copy of "Belt Engineering" sent on request.

NEW YORK BELTING & PACKING CO.
MECHANICAL RUBBER GOODS

New York, Pittsburgh, Boston, Salt Lake City, Chicago, St. Louis, Philadelphia, San Francisco

The illustration shows
Hot Saw Drive
Tacony Steel Co., Philadelphia
Test Special Belting
16 ft. 8½ inches long.
10 inches wide—6 ply.
Diam. Driver Pulley 18 inches R.P.M. 1200.
Diam. Driven Pulley 12 inches R.P.M. 1800.
Horsepower 30.



POPULARITY

A wood split pulley is a commodity which must base its popularity solely upon its performance. In other words, its usefulness, and not its price nor its beauty, is the criterion by which the consumer judges its value to his plant.

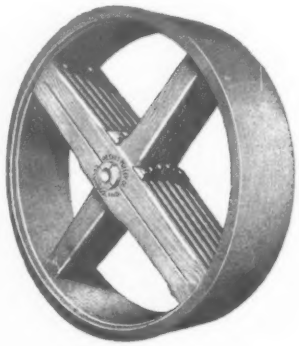
If, therefore, a pulley is popular—if its manufacturers enjoy a wealth of goodwill because of it—it argues for the performance of that pulley.

"The Reeves"

WOOD SPLIT PULLEY
is noted for its popularity.

Sold exclusively thru jobbers and dealers

REEVES PULLEY CO.
Columbus Indiana



A Detail *the Workman Appreciates*

When all is said and done, it is really the little intimate things which the workman constantly uses that makes him like or dislike a machine.

"Cincinnati" Machine Tool Handles are handles that fit the palm—easy to grasp and smooth to the touch.

These handles are machined from the finest of screw steel stock, and then are finely buffed and polished.

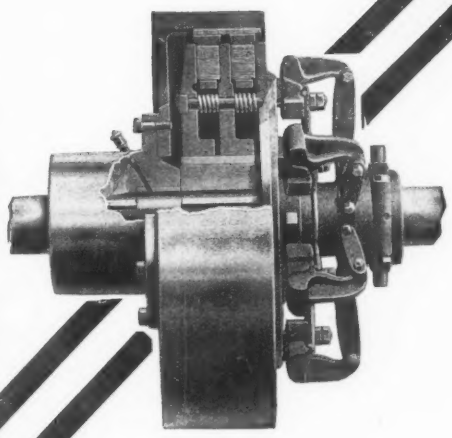
"Cincinnati" Machine Tool Handles are made in seven styles and in all sizes. In quantities of 25 and over we drill, keyway, counterbore, and face the center balls to your specifications.

Our immense supplies of materials, and large reserve stocks of handles already made up, insure you immediate deliveries. Let us know your requirements.

The Cincinnati Ball Crank Co.
70 North St. Cincinnati, Ohio

A hammer and about ten minutes time—this is all you need to connect line shafting with a "Cincinnati" Compression Coupling. Just slip the three longitudinal sections around the ends, drive home the rings, and you have a connection that will last for years and that will need no attention.

There are just five pieces to the "Cincinnati" Compression Coupling—three sectional pieces and two rings. It is simplicity carried to the nth degree.



For 63 Years

successful power users have been entrusting their transmission problems to our engineers—for sixty-three years our equipment has continued to make good.

Each year sees more and more of these careful buyers selecting their requirements from

SHAFTING
COUPLINGS
SET COLLARS
PULLEYS
HANGERS
FRICTION
CLUTCHES

THE

T·B·WOOD SONS CO.

LINE

BASE PLATES
FLOOR STANDS
PILLOW BLOCKS
WALL BRACKETS
ROPE SHEAVES
BELT·····
TIGHTENERS

They know that every unit in the entire line is built to give the utmost in service—that each individual "Wood" appliance accomplishes the purpose for which it is designed.

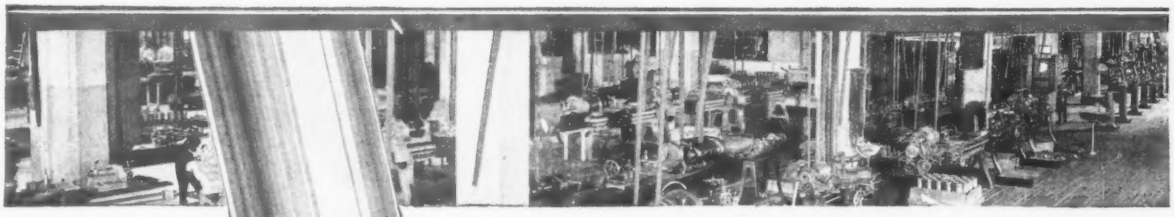
Are you ever confronted with unusual questions when figuring on the equipment for plants in your territory?

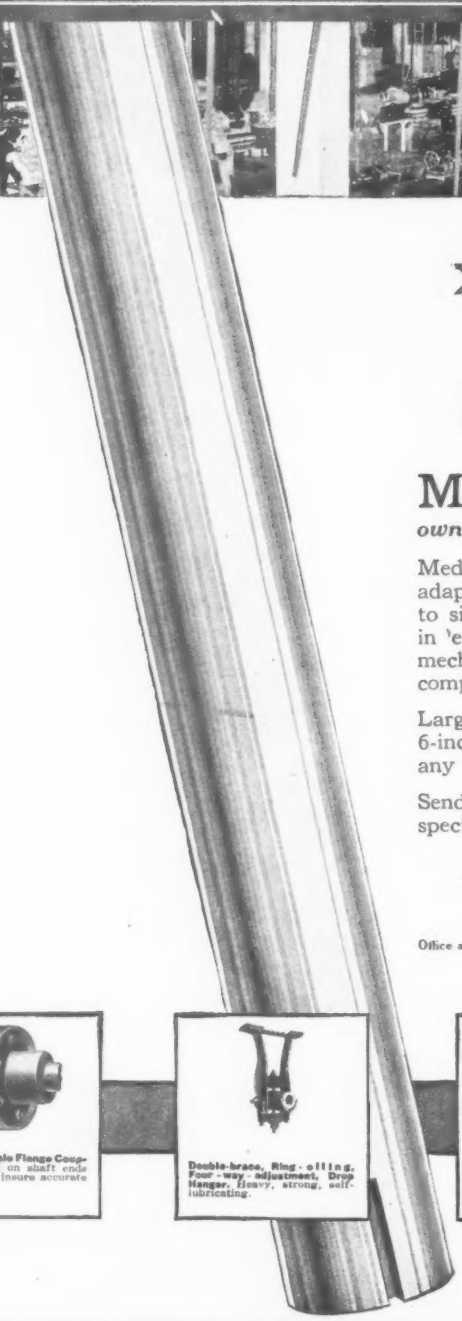
In cases of this kind simply communicate with our service department.

T. B. Wood's Sons Co.

Chambersburg, Pa.

MEDART *means* EVERYTHING *in* LINE SHAFTING EQUIPMENT





MEDART

Turned and Polished

Steel Shafting

MEDART is the only exclusive manufacturer of line shafting equipment producing—***in its own mills***—all of the shafting which it sells.

Medart shafting is made of special steel particularly adapted to the purpose, is perfectly straight, true to size and highly polished—in short, it conforms in every way to those same high standards of mechanical excellence which identify each product comprising the complete Medart line.

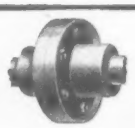
Large tonnages ranging in size from $\frac{3}{16}$-inch to 6-inch diameter always on hand. Orders for almost any quantity filled upon receipt.

Send for booklet, "Medart Steel Shafting"; submit specifications covering large tonnages.

Medart Patent Pulley Company

General Offices and Works:
St. Louis, U. S. A.

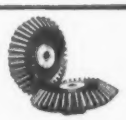
Office and Warehouse: Cincinnati **Offices: Chicago and Philadelphia**



Male and Female Flange Coupling. Pressed on shaft ends and faced to insure accurate alignment.

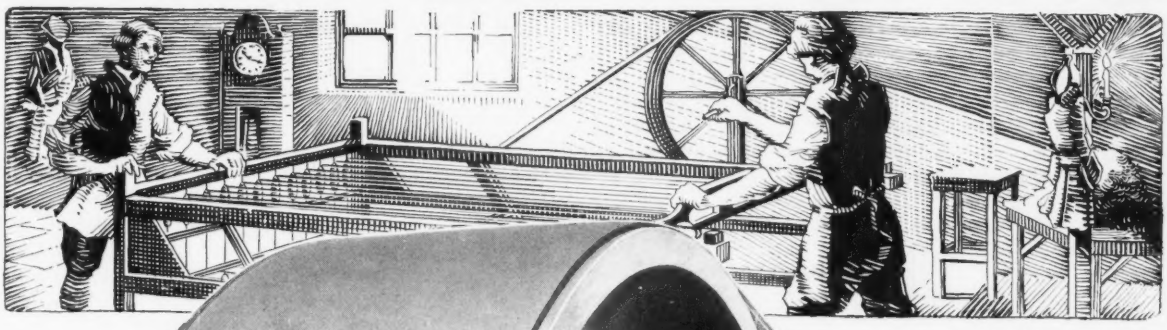
Double-brace, Ring-oiling, Four-way-adjustment, Drop Hanger. Heavy, strong, self-lubricating.

V-groove Friction Clutch, with steel-rim pulley attached to removable, extended sleeve. More than 50,000 in use.



Mitre Gearing. Whatever your needs, we can supply them. Gears cut up to 72-in. diameter.

JEWELL LEATHER BELTING



Jewell Belt on Hargreaves Spinning Jenny—1776

THE leather belting we have made for five generations of American manufacturers must have been good—

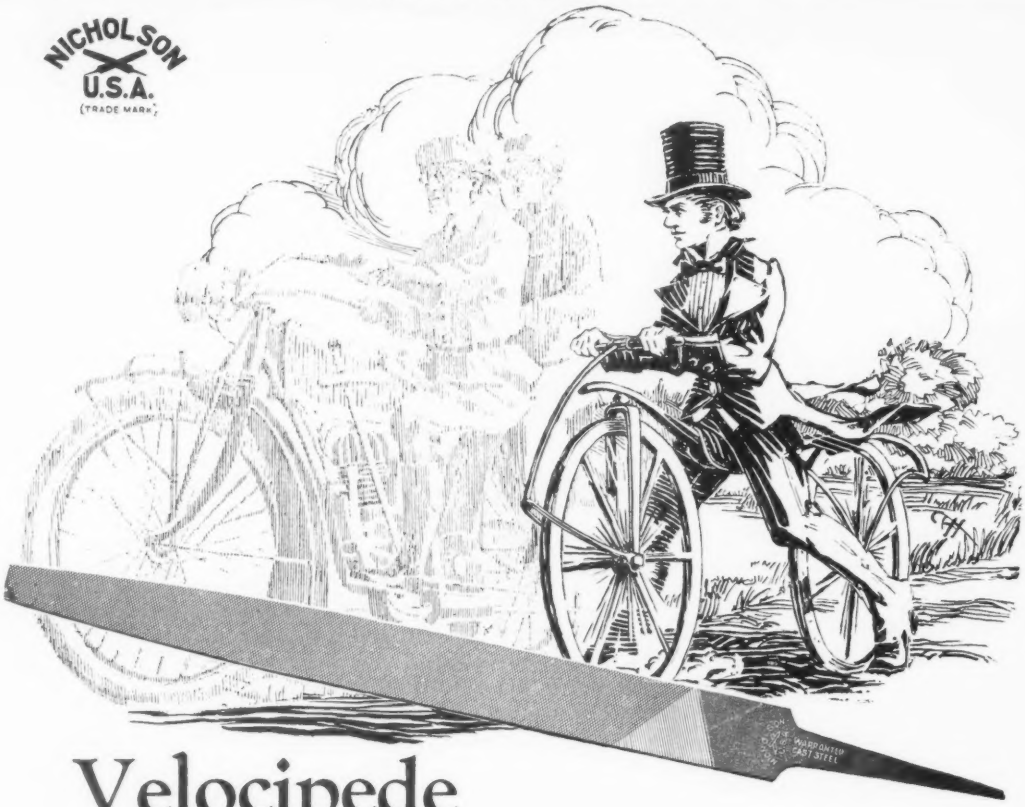
had it not been, we would be unable after 150 years, to put JEWELL on our belting, and be proud of it.

HARTFORD, CONNECTICUT

Western Branch:

2837 So. LaSALLE STREET, CHICAGO, ILL.

NICHOLSON U.S.A. (TRADE MARK)



Velocipede to Motorcycle

The velocipede was considered a dashing mount for the dandies of a past century. Its speed, when sturdily urged rivaled that of a horse. Its lineal descendant, the motorcycle, outstrips horse and "Horseless carriages" alike.

NICHOLSON FILES

played an important part in the development of transportation, whether by velocipede, locomotive or crude steamboat. And today's world-wide use of these 100% UNIFORM FILES is proof that they have kept pace with—even anticipated manufacturing demands—6000 kinds of ready-sharp files.

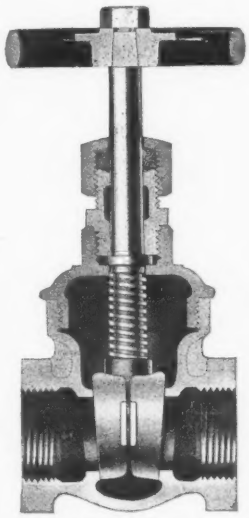
Ask for our catalog and for "File Filosophy"

NICHOLSON FILE CO.

PROVIDENCE, R.I., U.S.A.

"QUALITY FIRST"

Look For That Trade Mark



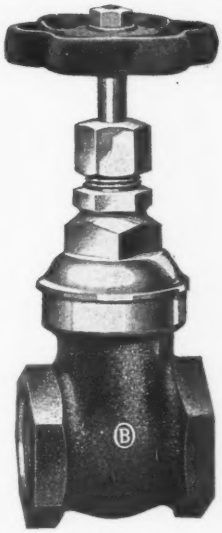
Sectional View of O-B Gate Valve

Because it is your guarantee that every valve made by The Ohio Brass Company has uniformity of quality and is dependable in service.

O-B Valves are designed to give longer and better service.

New York Chicago
Wm. P. Horn Co., Pacific Coast Agents
San Francisco Portland Seattle Los Angeles

THE OHIO BRASS COMPANY
Mansfield, Ohio

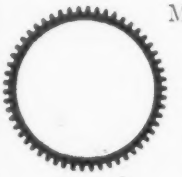


O-B Gate Valve

GEARS

SPUR BEVEL
MITER WORM
MORTISE WHEELS

With Cut or Machine Molded Teeth



Made of Cast Iron, Semi-Steel, Cast Steel, Steel Forgings, Bronze and Rawhide

We have the most complete line of gear preparations and patterns in the country.

Let us quote you prices.

H.W. CALDWELL & SON CO.
17th Street and Western Avenue CHICAGO
50 Church St., New York, 711 Main St., Dallas, Tex.

American Injector Co.

DETROIT MICH.

Get Our Prices Before Putting in Your Stock Order

Engineers' Red Book Free for Asking

All Steel Independent Chucks

(Number 3 of Eight Horton Leaders)

The body of this chuck is cast of a steel practically equal to machinery steel. This, together with the very wide jaws, the heavy operating screws, the deep ribs and the generally ample proportions make this a practically unbreakable chuck.

The large center hole enables the hub of the work to be passed back into the center hole of the chuck.

This line of steel chucks is only one of eight Horton leaders. A chuck for every chucking requirement and every chuck built for present day usage is a Horton accomplishment.

By special invitation a member of the Rice Leaders of the World Association.

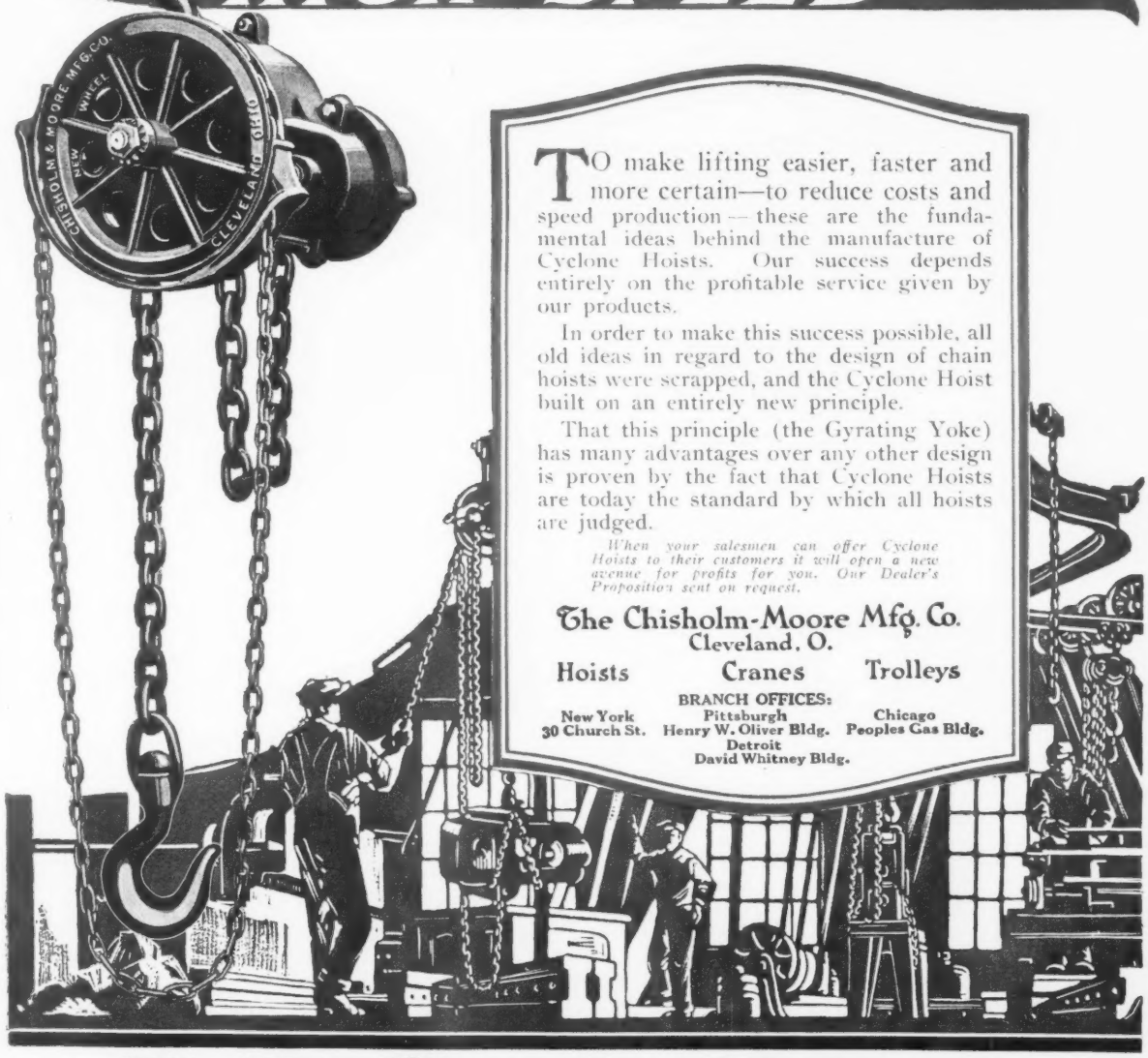
THE E. HORTON & SON CO.,
Windsor Locks, Conn., U. S. A.

BY INVITATION MEMBER OF
NEW YORK U.S.A.

109-11

Horton chucks

CYCLONE HIGH SPEED



TO make lifting easier, faster and more certain—to reduce costs and speed production—these are the fundamental ideas behind the manufacture of Cyclone Hoists. Our success depends entirely on the profitable service given by our products.

In order to make this success possible, all old ideas in regard to the design of chain hoists were scrapped, and the Cyclone Hoist built on an entirely new principle.

That this principle (the Gyrating Yoke) has many advantages over any other design is proven by the fact that Cyclone Hoists are today the standard by which all hoists are judged.

When your salesmen can offer Cyclone Hoists to their customers it will open a new avenue for profits for you. Our Dealer's Proposition sent on request.

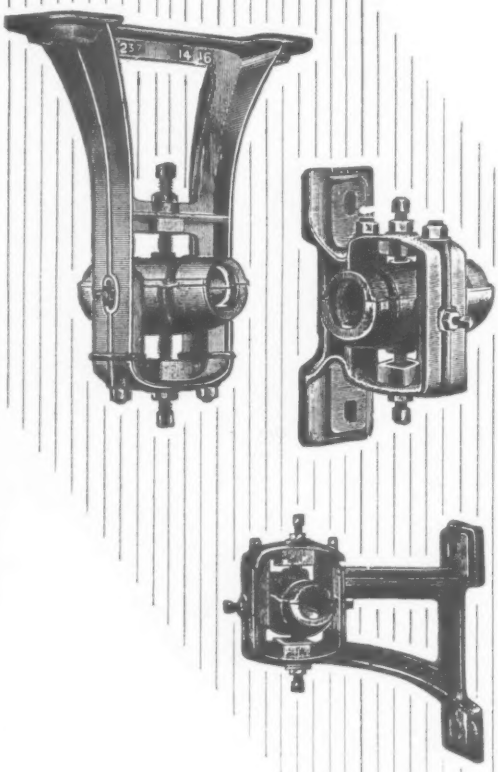
The Chisholm-Moore Mfg. Co.
Cleveland, O.

Hoists Cranes Trolleys

BRANCH OFFICES:

New York 30 Church St. — **Pittsburgh** Henry W. Oliver Bldg. — **Chicago** Peoples Gas Bldg. — **Detroit** David Whitney Bldg.

HOISTS



THE CHICAGO LINE CP&S CO POWER TRANSMISSION

The CHICAGO Line

of power transmission appliances is well designed, accurately made and suitable for any installation.

The Chicago Line of power transmission appliances should be investigated by every dealer, for—once a representative you are able to supply your trade with equipment

of QUALITY
of MODERN DESIGN
of DURABLE MATERIAL
at PRACTICAL PRICE
with PROMPT SERVICE

A line that can be depended on to give honest day in and day out service. A line that is well made, well balanced—guaranteed.

A line that offers you as a dealer a healthy, money making proposition.

Investigate our dealer proposition.

Chicago Pulley & Shafting Co.

Main Office:
40 South Clinton St.
Chicago, Ill.

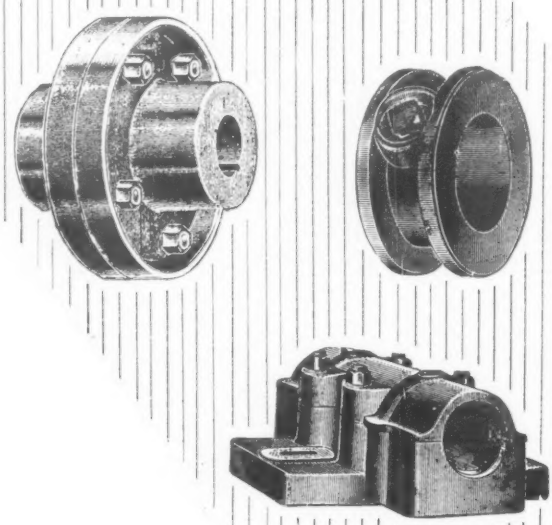
Factory
Menominee Falls
Wisconsin

In addition to our complete standard Chicago Line of power transmission we can supply our dealers with

Daggett Ball Bearing Loose Pulley.
Daggett Ball Bearing Clutch Pulley.
Ball Bearing Hanger.

All equipped with S K F Ball Bearings

By actual operation in thousands of plants these Ball Bearing appliances have gained recognition as the most efficient, trouble-free power transmitting equipment. Superior in efficiency to babbitt or roller, they are dust-proof—noiseless—can not stick—freeze or wear the shaft, and seldom require lubricant.



This Truck goes out with the Load

Here's a miniature photograph of the illustrated catalog. This will show you how McKinney Trucks can be used with different lines of merchandise. It will suggest many possible sales. Copies for your salesmen will be sent upon request.

Here's more power to the transportation section—an idea that will increase your McKinney One-Man Truck sales.

Boxes, barrels and bales must be moved from the floor to the motor truck. And later moved again from the truck to the receiving point. Today the aim in motor transportation is to cut down the length of stops and make more deliveries.

The McKinney One-Man Truck Service speeds up the moving of merchandise and slows down the expense. The McKinney One-Man Truck and just one man are needed to move any article on the floor. This truck is loader, bale hook and helper all in one.

And its service doesn't stop in the shipping department. It can go right along with the load and serve at the other end. In the McKinney One-Man Truck the driver has the steadiest, surest helper on the pay roll. This truck is more necessary to the motor carrier than a spare. When he drives up to his destination he gets the load off in a jiffy. No straining, sticking, bumping or banging. The McKinney One-Man Truck is virtually a portable conveyor.

Talk to the man who thinks the overhead in his trucking department can stand a little trimming. Suggest this idea by which he can increase motor trips—get more work done in a day's time. Then point out how easy it is to operate McKinney One-Man Trucks, how strong they are and how they are suitable for moving any type of merchandise.

Dealers who are not familiar with the McKinney One-Man Truck method can get complete information upon request. When you sell this truck you deal in more than a mechanical device—you are selling a service.

McKINNEY MANUFACTURING CO.
Pittsburgh Export Representation

Also manufacturers of McKinney Hinges and Butts, garage and farm building door hardware and furniture hardware.

McKINNEY *one-man* TRUCKS

A Large Stock of Complete
Line on hand at all times
for immediate Delivery

We co-operate to the fullest extent with our dealers.

GEORGE W. PYOTT CO.

North Avenue and Noble Street CHICAGO

Clipper
Clipper Belt Lacer Co.
REGISTERED TRADE MARK

When You Say "Clipper" to a Customer

you convey the information that he can procure from you the best known method of lacing belts. You need not say a word about the "Clipper" function or the manner in which it operates, *yet he will know*, for in his mind, through advertising and through shop experience, is the thought

The Clipper Belt Lacer
Laces a Belt in Three Minutes

The "Clipper" Belt Lacer is good merchandise for you to supply because it is a necessity appreciated by the man with belts to lace. You do not have to "sell" the "Clipper"—it is used everywhere, preferred for its outstanding superiority, and nationally advertised. Once it is known that you supply the "Clipper" and its carded hooks, you will find a growing list of "Clipper" enthusiasts giving you their business.

"Clipper" laced belts are literally endless; the joint made is as flexible, as strong and hugs the pulleys as closely as the belt itself. The "Clipper" laced joint is square, smooth and flat—the belt will run true. No material is cut away; no big holes are punched. In the case of fiber belts no strands are cut to fray. The "Clipper" makes the ideal, dependable joint and does it in three minutes. No wonder the "Clipper" dealer does such a gratifying business.

"The Connecting Link Between Power and Production"

Any workman can lace a belt the "Clipper" way and do the job well. The cost is negligible, while the saving, by keeping power drives working, is beyond calculation.

The American Museum of Safety gave the "Clipper" the only gold medal ever awarded for metal lacing.

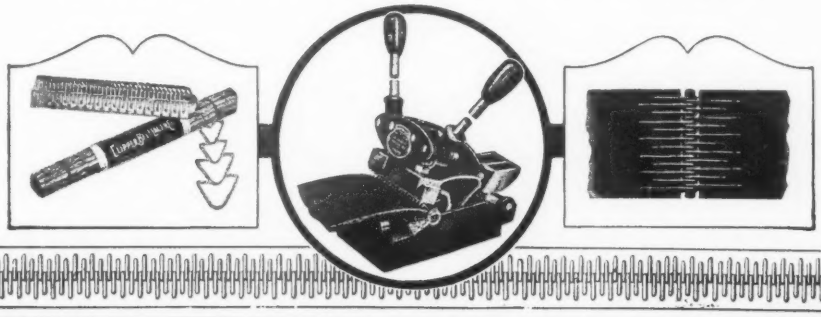
The "Clipper" is backed by an unrestricted guarantee and, upon request, goes to responsible parties for free trial.

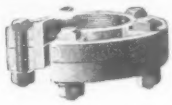
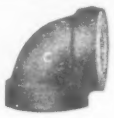
Most mill supply houses sell the "Clipper."
Dealers not stocking it write for particulars.

WE WILL BE THERE — FOUNDRYMEN'S AMERICAN ASSOCIATION — YOU ARE INVITED

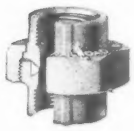
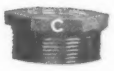
1920 FOUNDRY & MACHINE EXHIBIT
COLUMBUS, OHIO
October 4-8
Bigger and Better Than Ever

Clipper Belt Lacer Company
GRAND RAPIDS, MICHIGAN, U.S.A.



Suggestions for Factory Heating

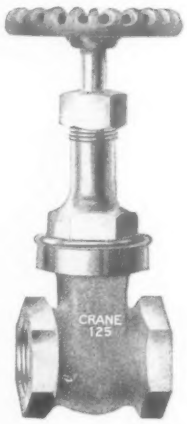



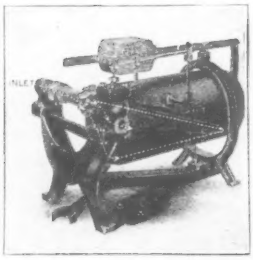
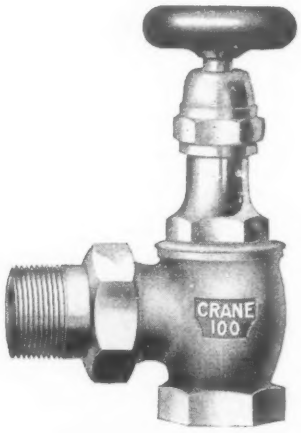
The heating apparatus of the modern factory is of prime importance. To produce the best results with reasonable economy requires the use of high-grade equipment. The

CRANE

line of products for heating is complete, and meets all requirements according to the best modern practice.

Fully described in our catalogue, which will be sent on request.



SALES OFFICES, WAREHOUSES AND SHOWROOMS:

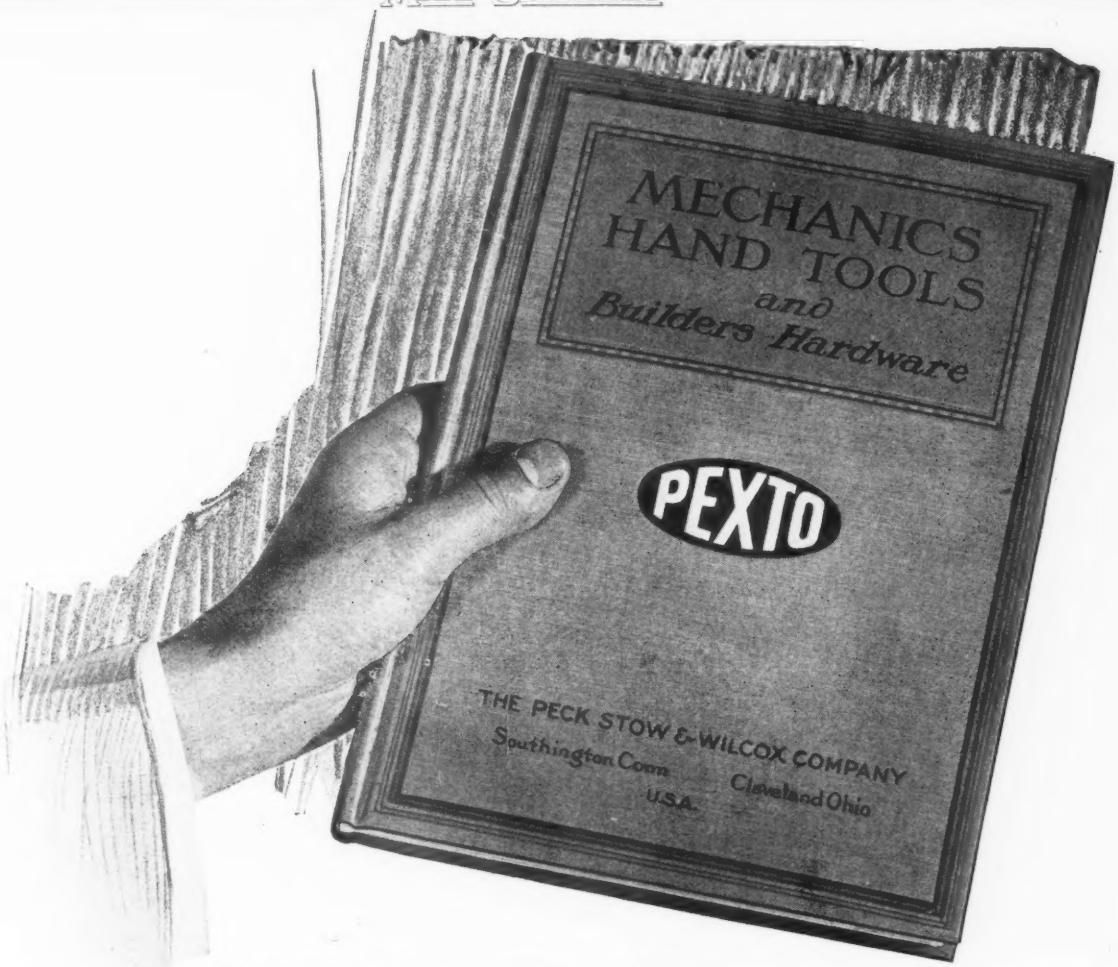
BOSTON, SPRINGFIELD, BRIDGEPORT, ROCHESTER, NEW YORK, ALBANY, BROOKLYN, PHILADELPHIA, NEWARK, CAMDEN, BALTIMORE, WASHINGTON, SYRACUSE, BUFFALO, SAVANNAH, ATLANTA, KNOXVILLE, BIRMINGHAM, MEMPHIS, LITTLE ROCK, MUSKOGEE, TULSA, OKLAHOMA CITY, WICHITA, ST. LOUIS, KANSAS CITY, TERRE HAUTE, CINCINNATI, INDIANAPOLIS, DETROIT, CHICAGO, ROCKFORD, OSHKOSH, GRAND RAPIDS, DAVENPORT, DES MOINES, OMAHA, SIOUX CITY, ST. PAUL, MINNEAPOLIS, DULUTH, FARGO, WATERTOWN, ABERDEEN, GREAT FALLS, BILLINGS, SPOKANE, SEATTLE, TACOMA, PORTLAND, POCATELLO, SALT LAKE CITY, OGDEN, SACRAMENTO, OAKLAND, SAN FRANCISCO, LOS ANGELES

FOUNDED BY R. T. CRANE, 1855

CRANE CO.
836 S. MICHIGAN AVE.
CHICAGO

WORKS: CHICAGO AND BRIDGEPORT

CRANE LIMITED — MONTREAL, TORONTO, VANCOUVER, WINNIPEG, LONDON, ENG., SYDNEY, N. S. W., QUEBEC, HALIFAX, OTTAWA, CALGARY.



Did You Get Yours?

More than a catalog, this wonderful book is a silent salesman of indispenable daily help to hardware buyers, salesmen, clerks, etc.—just off the press.

Your copy of this remarkable centennial edition is ready. 257 pages of information covering the most complete line—Pexto—of mechanics' hand tools, builders' and general hardware manufactured by any one maker.

Shows colored illustrations of all the principal products with descriptive talks to aid in making sales. Contains news and illustrations of text books for workmen, pruning book for the gardner, standard details for contractors and builders. Explains the new re-hardware idea which increases the builders' hardware business of the merchant. A wonderful book—this centennial edition—which supplants all previous editions of Pexto Catalogs. Your copy will be promptly sent on request.

THE PECK, STOW & WILCOX COMPANY
Mfrs. Mechanics' Hand Tools, Tinsmiths' and Sheet Metal Workers' Tools and Machines, Builders' and General Hardware.
Southington, Conn. **Cleveland, Ohio**
Address correspondence to 230 W. Center St., Southington, Conn.

PEXTO

MECHANICS HAND TOOLS AND BUILDERS HARDWARE

MACHINEBRONZE

CORED AND SOLID BRONZE BARS

Mr. Dealer—
Don't Overlook this Line

TWENTY-ONE mill supply houses in different sections of the country are finding the Machinebronze Agency a valuable asset.

Here's *Better* Bearing Service

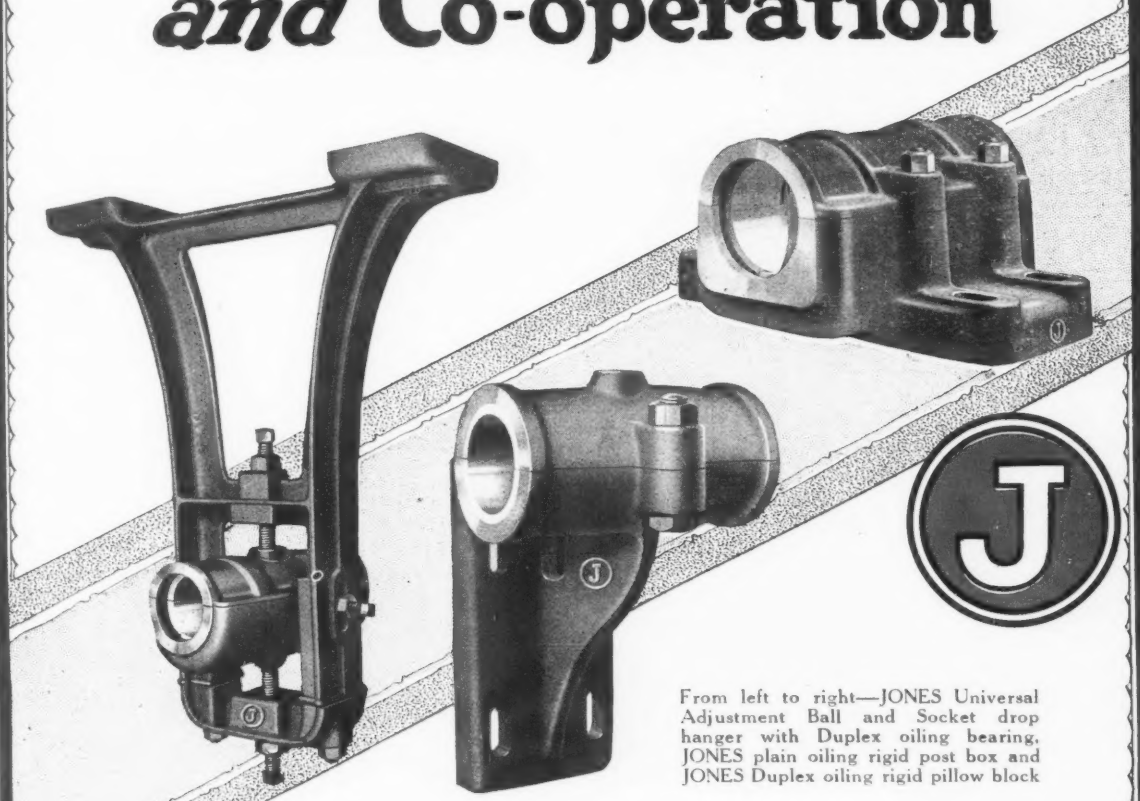
STOCKED by dealers in 12-inch lengths in various sizes. We want the live Dealers in territory where we are not now represented. Our Sales Campaign will put Machinebronze on the map in your territory. *Write us for particulars.*

DISTRIBUTORS

Beck & Gregg Hardware Company	Atlanta, Ga.
Vermont Farm Machine Company	Bellows Falls, Vt.
Chandler & Farquhar Company	Boston, Mass.
Beals, McCarthy & Rogers	Buffalo, N. Y.
Machinists Supply Company	Chicago, Ill.
The E. A. Kinsey Company	Cincinnati, Ohio
The Cleveland Tool & Supply Co.	Cleveland, Ohio
The T. B. Rayl Company	Detroit, Mich.
McMullen Machinery Company	Grand Rapids, Mich.
J. Russell Company	Holyoke, Mass.
A. P. Dienst Company	New York, N. Y.
The Richards & Conover Hardware Co.	Kansas City, Mo., and Oklahoma City, Okla.
Pil. Gross Hardware Company	Milwaukee, Wis.
Manning, Maxwell & Moore, Inc.	New York, N. Y.
Sherritt & Stoer Company, Inc.	Philadelphia, Pa.
Pittsburgh Supply Company	Pittsburgh, Pa.
Smith-Courtney Company	Richmond, Va.
Carey Machinery & Supply Co.	Baltimore, Md.
Washington Machinery & Supply Co.	Spokane, Wash.
Homer Strong	Rochester, N. Y.
Belcher & Loomis Hardware Co.	Providence, R. I.

LUMEN BEARING COMPANY
BRASS FOUNDERS
BUFFALO

For Quality, Service *and* Co-operation



From left to right—JONES Universal Adjustment Ball and Socket drop hanger with Duplex oiling bearing, JONES plain oiling rigid post box and JONES Duplex oiling rigid pillow block

MILL supply dealers handling JONES **Quality** transmission bring into their business a driving, energizing influence that means eventual dominance on this class of business.

When you line up with JONES transmission you do more than simply add a good line. You immediately put yourself on record as a live, energetic and progressive concern that is out after business on a basis of service and satisfaction.

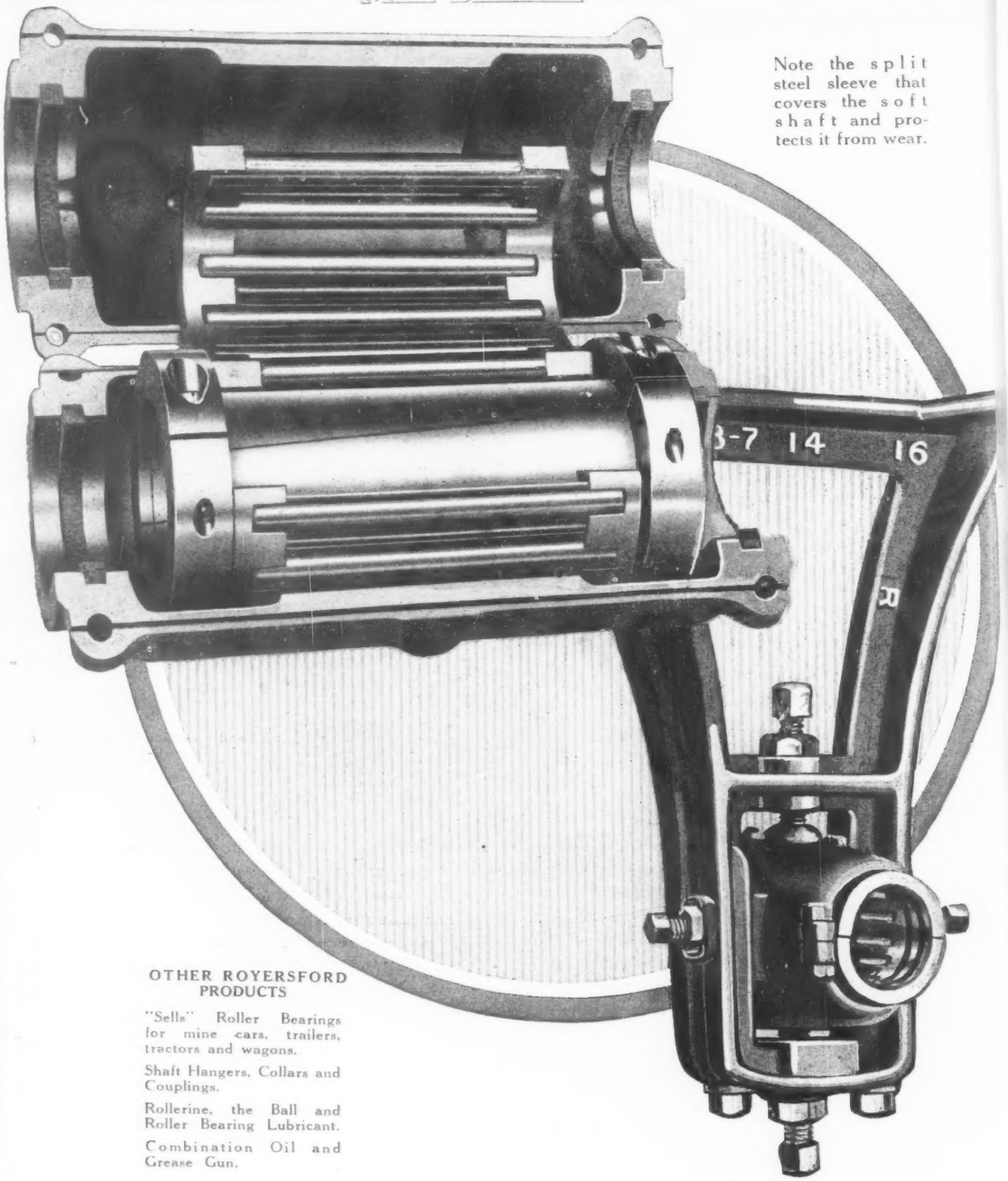
JONES co-operation is **definite** and **substantial.** It fills a long felt want with most dealers and puts that needed "pep" and push into their sales efforts which they are unable to secure in any other way.

Full Particulars on Request

W.A.Jones Foundry & Machine Co.

4411 West Roosevelt Road, Chicago.

New York, 20 Murray Street



Note the split steel sleeve that covers the soft shaft and protects it from wear.

OTHER ROYERSFORD PRODUCTS

"Sells" Roller Bearings for mine cars, trailers, tractors and wagons.

Shaft Hangers, Collars and Couplings.

Rollerine, the Ball and Roller Bearing Lubricant.

Combination Oil and Grease Gun.

Sells Roller

SELLS

The only roller bearing that will fit present hanger frames

The ease and speed with which Sells Roller Bearings can be installed in present hanger frames, post hangers and pillow blocks is but one reason why such concerns as Gillette Safety Razor Company, Aunt Jemima Mills Company, United Shoe Machinery Company, American Car & Foundry Company and Dodge Brothers have adopted them.

A few of the other reasons are:

They are full floating and absorb end thrust—

Rollers are carbonized, hardened and ground outside and have soft resilient centers—

Rollers are retained **snugly** in a cage and held apart—

No roller-against-roller friction—

And the split-steel sleeve that protects the soft shafts from all wear.

These are also reasons why it will pay you to handle Sells Roller Bearings.

We would like to hear from a few dealers of the sound, substantial sort.

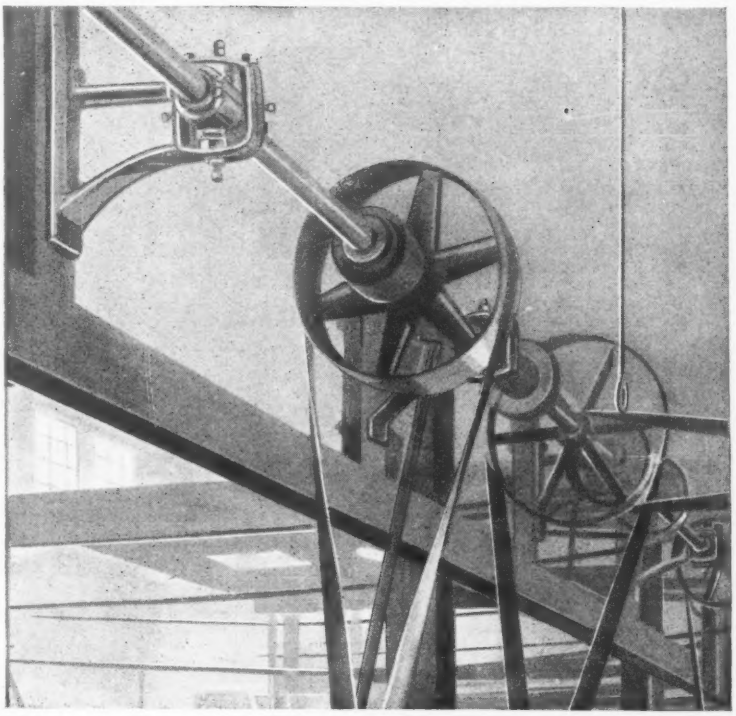
John D. Sells
Manager

Royersford Foundry & Machine Company

43 N. Fifth St. Philadelphia, Pa.

The Wm. and Harvey Rowland Installation.

Sells Roller Bearings have reduced power costs 20 per cent in the automobile spring making plant of Wm. and Harvey Rowland, Tacony, Pa.



Bearings

Something to Crow About

What our Milwaukee Distributor thinks of Burmaline Woven Belting

H. D. DETIENNE, PRESIDENT — J. E. DETIENNE, VICE-PRESIDENT — S. B. DETIENNE, TREASURER — E. S. DETIENNE, SECRETARY

WISCONSIN STATE RUBBER CO.

INCORPORATED

PHONE GRAND 1761 181-183 FOURTH STREET

MILWAUKEE, WIS.

Burrell Belting Co.,
Chicago, Illinois.

July 29, 1920.

Gentlemen:

As distributors of Burmaline Belting for the past seven years, we have naturally had a great deal of experience in selling Burmaline Belting. We feel it is only fair to your company to give you some idea of what our experience in distributing Burmaline Belting has taught us, and what it has done to assist us in building up a very satisfactory volume of business. We are now making our fifth move into larger headquarters, and around November 1st will occupy our own building, which we believe, when finished, will give us one of the finest rubber stores in the State of Wisconsin. We attribute a great deal of our success to the quality of the product you have delivered to us, and the co-operation and service we have received from you in filling our orders.

It is our experience that every manufacturer today is interested in any item that will assure him of increased efficiency in his plant, and especially so if this efficiency can be obtained at a saving in his operating cost. We have been able to convince a great many manufacturers in Milwaukee and elsewhere in the State that Burmaline Belting will positively do this for them; also, that they can use it on any drive in their plant except where there is considerable moisture, and that it will give them equal or better service than leather belting, at, of course, a great saving in cost.

For the past year or two we have been convinced that Burmaline Belting has successfully passed through the experimental stage, and we do not hesitate recommending it for any kind of drive, regardless of the conditions existing. We consider our distributor's arrangement with you is a very valuable one to us, and that it has been one of the main factors of our growth. We are also confident that if you can continue to deliver to us belting of the same quality that we have been receiving, that our business is going to steadily increase as we are getting new trade every day. Our sales so far this year are more than double what they were last year, and we believe you will agree with us that this volume was considerable.

It is not often that we write a letter of this kind unsolicited, but are doing so in this instance because we feel that it is only fair on our part to assure you of our appreciation for the Quality of the product you have delivered to us, and the assistance you have given us in our sales work.

Yours very truly,

WISCONSIN STATE RUBBER CO.

HDD/CL

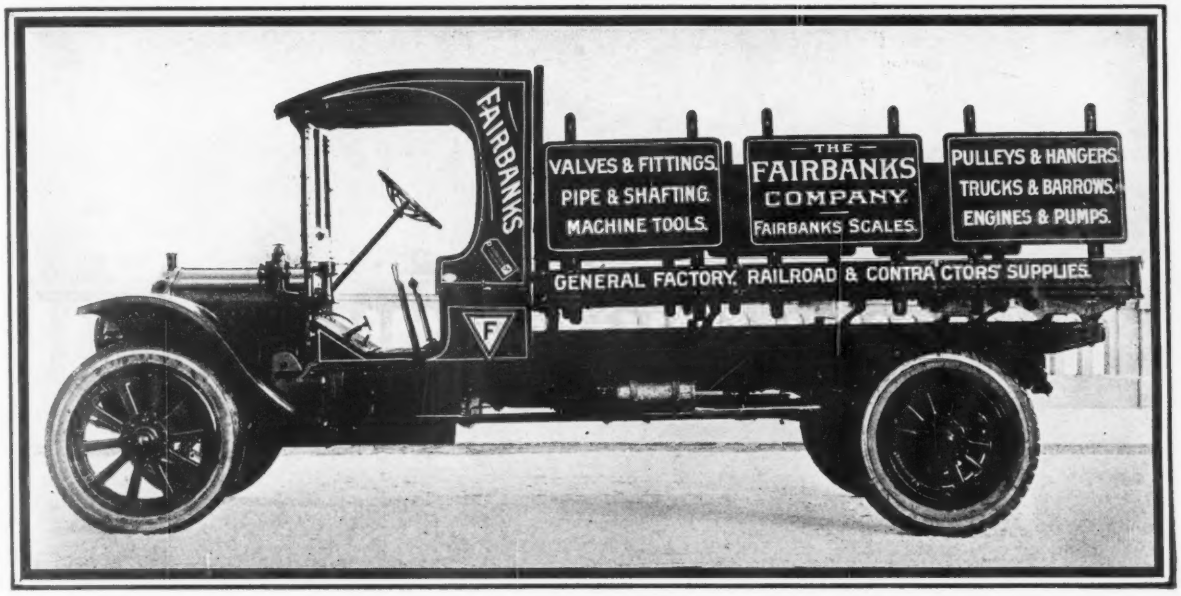
Per H D Detienne
President

DISTRIBUTORS OF QUALITY RUBBER GOODS AND RUBBER ACCESSORIES OF EVERY DESCRIPTION

A Positive
Substitute
For Leather Belting
At One-half the Cost

Burrell Belting Company

415-419 South Hermitage Ave., Chicago



White Truck operated by the Baltimore Branch of the Fairbanks Company

Operates Whites *in* Nine Cities

A FLEET of White Trucks in the service of the Fairbanks Company is meeting a wide range of operating conditions. In nine cities —over the hills of Pittsburg, through the poorly paved streets of New Orleans' wholesale section, in Detroit, Baltimore, Buffalo, Philadelphia, Newark, St. Louis and Bridgeport—this White fleet is giving uniformly dependable service.

"Our experience has been most satisfactory," says J. A. Hall, manager of the Traffic and Warehouse Division. "Our branch managers all praise Whites highly."

The ability of White Trucks to stand up and keep going assures a steady volume of performance day in and day out, year after year. Owners' records furnish convincing evidence that Whites do the most work for the least money.

THE WHITE COMPANY
CLEVELAND

White Trucks

1st Careful laboratory work watches the fitness of the steel itself.

2d The micrometer faithfully guards the uniform correctness of jigs, dies and tools.

3d This test picture shows how the accuracy of bushings is guarded.

4th Guarding circumferential accuracy. Lasting trueness is assured by a series of such tests.

5th Perfect balance is insisted upon and guarded with the utmost care. Interchangeable parts help make this possible.

Safeguarding Pulley Accuracy

THE illustrated tests are only a few of a long series of continuous safeguards of accuracy. These successive tests—based on the concentrated study of the pulley, its parts and its purpose—are the strongest possible assurance of uniform perfection. Variance is precluded. Each "American" Pulley is as true and perfect as every other "American."

And there is put into each separate part the same degree of perfection in design and construction as is finally found in the completed pulley. This guarding of accuracy at every stage of production should appeal to the most uncompromising engineer.

It may perhaps help you to judge *all* pulleys if you will write us for the book, "Getting Maximum Pulley Efficiency." Free, of course.

See Donnelley's Red Book for name and address of nearest agent. On file in all leading libraries, national banks and hotels

More than Five Million "American" Pulleys now save power in efficient plants here and abroad. The steel split pulley combines strength and durability with lightness, and it is quickly installed without stripping of busy shafts.

The American Pulley Co.
Philadelphia, Pa.

The AMERICAN PULLEY

"A wheel with a broad rim transmitting power from or imparting power to machinery, or changing the direction of motion by means of a flat belt."

You Will Find It a Money Maker

HARDINGE SYSTEM
of Watchman Registration

No Modern Plant Is Complete Without This Protection—

You Should Be in Position to Supply the Demand.

Many jobbers of Mill Supplies and hardware find it very profitable to handle Hardinge System of Watchman Registration—not only for the money involved but as a means to secure new accounts.

It is something that is needed by every plant that employs a watchman.

The value of such protection is recognized by the fire insurance underwriters. They concede a substantial reduction in the insurance premium where it is used.

It is easy to sell. Every old plant without such protection is a prospect—no new plant is complete without it.

The first unit of sale is $60 or more—with continual additions as the plant grows.

You will find it a matter worth careful investigation. Let us give you full particulars about our special jobbers proposition, selling assistance and discounts.

HARDINGE BROS., Inc.,
4145 E. Ravenswood Ave., Chicago, U. S. A.

HARDINGE

100% Dealer Distribution
by a
Leather Belting Manufacturer

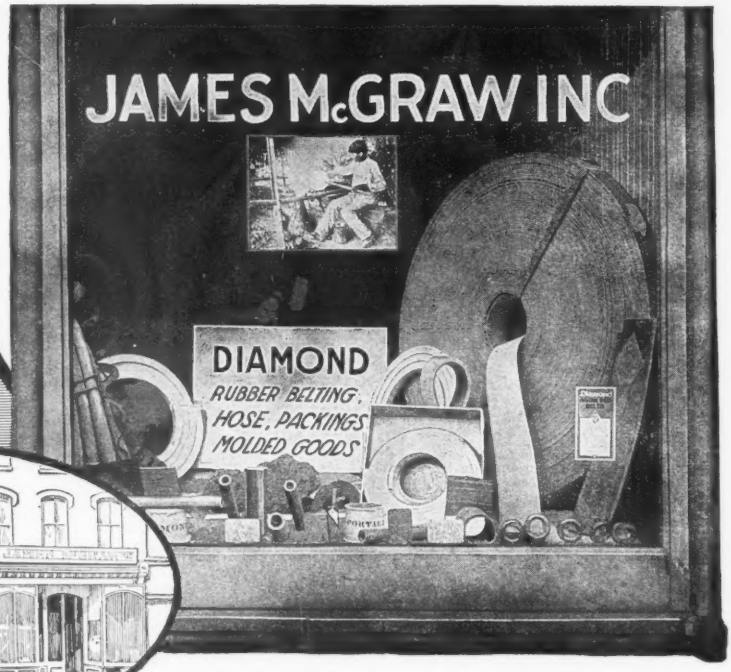
One of the large, old established leather belting manufacturing companies has recently announced that its policy will be to distribute all its different brands of leather belting exclusively through dealers.

The company says that it will guarantee the dealers handling its line that none of its brands of leather belting can be bought by any consumer in the United States *except through the dealer agent or with his consent.*

This is additional evidence of the efficiency of dealer distribution. This belting company has asked and will receive the hearty co-operation of dealers in distributing its goods in this economical manner.

A list of members of the National Supply and Machinery Dealers' Association is yours for the asking. An examination of the list will convince any manufacturer of the services available.

The National Supply and Machinery Dealer's Association
General Offices, 505 Arch Street Philadelphia



That's the way Diamond works with a distributor. *Become one!* Write us for full particulars.

Diamond Promised to Co-operate

And it Did! — Sent a corking good salesman to work with the McGraw organization and furnished plenty of attractive advertising.

The Result: — Sales increased 350%.

THE DIAMOND RUBBER CO.,
Philadelphia, Pa.

Richmond, Va., June 24 1920

Gentlemen:

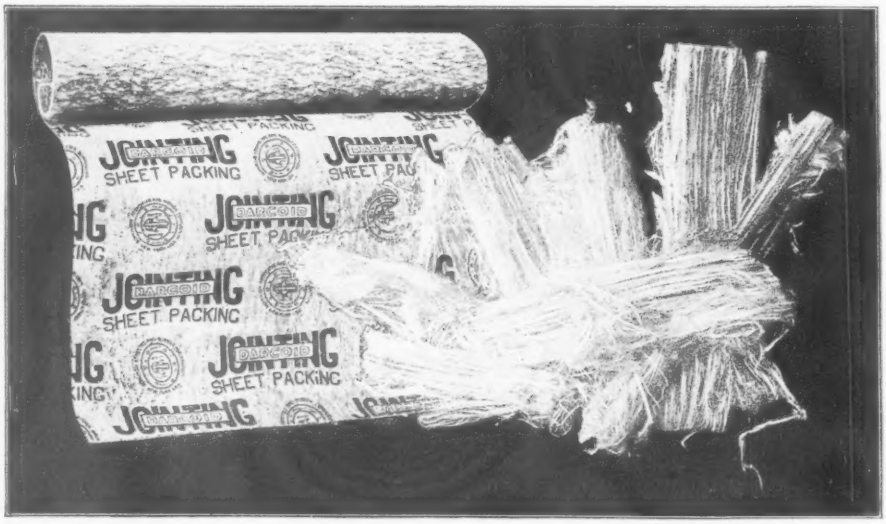
In view of the fact that the Mechanical Rubber Goods end of our business has grown to be of much importance with us, we take this opportunity to express our appreciation for your co-operation and service, which have been of much assistance in the way of taking care of our customers so they feel confident in placing this class of business with us.

For your information, we wish to advise you that we have increased our Mechanical Rubber Goods sales approximately 350 per cent over that of last year. Our salesmen have confidence in the quality of your line, and of course, this is one of the reasons for the remarkable growth of our sales.

Yours very truly,
JAMES McGRAW, Inc.
[Signed A. E. Klinger, Mgr.]

THE DIAMOND RUBBER COMPANY
Incorporated
Akron, Ohio

Diamond Mechanical Products



MORE ASBESTOS

Asbestos is what gives a sheet packing resistance. More asbestos simply means greater resistance to every kind of attack. Darcoid contains more asbestos than any other sheet packing.

DARCOID
SHEET PACKING

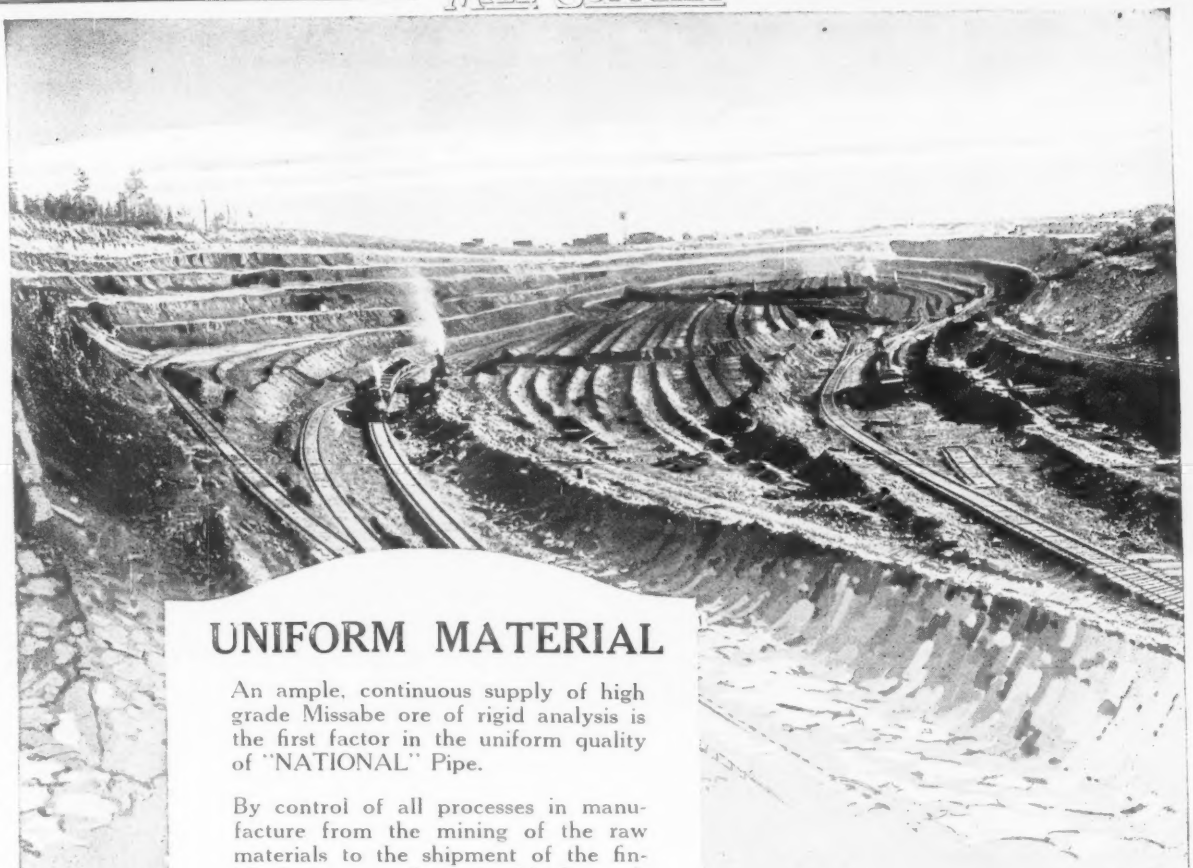
If you want to give your customers all the sheet packing value you possibly can, sell Darcoid.

DOMINION
ASBESTOS & RUBBER CORP.

Main Office: 154 Nassau St., New York

Service Branches: Baltimore, Cincinnati, Indianapolis, Los Angeles
New York: 67 Murray Street
Norfolk, Philadelphia, San Francisco, Seattle

DARCOID SHEET PACKING STAYS PUT



UNIFORM MATERIAL

An ample, continuous supply of high grade Missabe ore of rigid analysis is the first factor in the uniform quality of "NATIONAL" Pipe.

By control of all processes in manufacture from the mining of the raw materials to the shipment of the finished pipe a predetermined high standard of quality is assured in the finished product—

UNIFORM PIPE

NATIONAL TUBE COMPANY, PITTSBURGH, PA

General Sales Offices. Frick Building

DISTRICT SALES OFFICES

Atlanta, Boston, Chicago, Denver, Detroit, New Orleans, New York, Salt Lake City, Philadelphia, Pittsburgh, St. Louis, St. Paul

PACIFIC COAST REPRESENTATIVES: U. S. Steel Products Co., San Francisco, Los Angeles, Portland, Seattle

EXPORT REPRESENTATIVES: U. S. Steel Products Co., New York City

LOOK FOR

NATIONAL

THE NAME

"NATIONAL" PIPE

ALEXANDER
LEATHER BELTING

ALEXANDER BROTHERS
Philadelphia

CHICAGO	CLEVELAND	NEW ORLEANS
BOSTON	NEW YORK	NEW HAVEN
DETROIT	ATLANTA	LONDON PARIS

In addition to the above branches, distributors of Alexander Leather Belting, Mechanical Leathers, Harness Leathers, Strapping Leathers, Curried Leathers, Sole Leathers, Belt Dressing and Belt Cement are located in all of the principal cities of the United States and throughout the world.

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MILL SUPPLIES

"the journal of quality"

AN INDEPENDENT MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF THE JOBBERS AND MANUFACTURERS OF MILL, STEAM, MINE AND MACHINERY SUPPLIES

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EDWARD J. McOSKER, CARL W. MILLER, E. O. KLEIN
Associate Editors

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THE DOLLAR IN 1920

The dollar of today is as unstable in its purchasing power in the United States as is the weather. Its value depends entirely on where you are spending it, and on what you are buying. If you are building a home or a business structure, it is worth about forty cents. If you are venturing on the purchase of a rather better than average suit of clothes your dollar may pass muster at somewhere between fifty and sixty cents. In buying a drink or tipping a supercilious waiter you cash it in at not better than twenty-five cents. The situation may have some humorous sides, depending largely on how you obtained your dollar, but to the average man the joke is too far away to be recognized. When the dollar moved along at a measure of one hundred cents, it was fairly pleasurable to dance, and payment to the fiddler caused little pain, but when one jazz movement after another hit it, the speed constantly increasing, a lot of people began to find unexpected financial aches and pains developing.

The more congested the population, the more serious the situation. Take Chicago as an extreme example. Rents are still mounting, and with building practically at a standstill on account of the scarcity of building materials and the almost impossible demands of labor, the housing situation is extremely critical. Whether you desire to buy a home or rent a place to shelter you, the situation is the same—your dollar is worth but fifty cents. No sensible man thinks for a moment of blaming labor alone for this condition. The manufacturer, the middleman and the retailer have all taken turns in boosting the cost of living, and the man with nothing but his time to sell has from time to time found the going exceedingly good, and grabbed off as large a slice of the pie as possible.

The vicious circle of advancing costs is still whirling, despite the prevalence of information indicating falling prices. Business, speaking broadly, passed the peak some time ago, and has for months been on the decline, while the cost of doing business is increasing in almost every line. There must be an end to this condition soon, and every sane man knows exactly how it will be brought about. Building operations cease, the activity of producers and handlers of building materials are curtailed, related industries are adversely affected, and hundreds of thousands of men are thrown out of employment. These idle men and their families stop buying not only luxuries, but are forced to curtail the purchase of high priced necessities, and then all things begin to readjust themselves to the changed conditions. What the results of this change will be depends entirely on the common sense of employer and em-

ploye, but for a time we are likely to see an abnormal number of strikes when the effort is made to adjust wages downward.

The orgy of spending has passed, the peak of profits in business is behind us, and there would seem no possible excuse for further advances in the prices demanded for either commodities or labor, but it is to be feared that some of the speed fiends will make at least one more attempt to jazz the other fellow's dollar. Publishers have been unusual sufferers, with paper costs advanced about two hundred per cent, postage the same, and printing costs a close third. It is to be hoped that printers and paper-makers will realize that the publishing industry has not only reached the limit in price advances, but that the peak in volume of business was reached some months ago. Curtailment of business all along the line seems the only way to bring the people to their senses, so the sooner the movement gains real headway the sooner we can return to a sane way of living, with a dollar buying somewhere near one hundred cents' worth of whatever the owner desires to purchase.

CANVASS BRINGING RESULTS

Replies to letters sent out by MILL SUPPLIES in quest of information from manufacturers of machine tools and distributors of mill supplies as to the extent to which machine tools are at present distributed by supply houses and the attitude of both manufacturers and dealers on the subject have brought unusually gratifying results thus far, both in the number of replies received and the nature of many of the responses.

The canvass conducted by MILL SUPPLIES has strikingly brought out one fact of note—that where mill supply houses have thoroughly tried out the handling of machine tools, they are convinced of the soundness of the policy. So, likewise, in instances where manufacturers have done a part or all of their distributing through supply houses, they have found success. Although the canvass is not even near completion at the present time, it is plain to be seen that there is a surprisingly large number of supply concerns handling machine tools. What is more, there are numerous manufacturers and mill supply men who are not at present following the principle of supply house distribution of machine tools, but who are deeply interested in the proposition and who are either planning to adopt that principle or are eagerly awaiting the results of the canvass with a view to serious consideration of the matter.

Readers of MILL SUPPLIES may well read the article in this month's issue under the caption, "Machine Tool Sales Aid Supply Business." This story was written by a representative of the magazine after personal interviews with officials of several of Detroit's most successful mill supply houses, and it brings out several facts which manufacturers of machine tools and distributors of mill supplies may not have considered heretofore.

The question of distribution through mill supply houses is one which machine tool manufacturers have gradually come to consider more and more seriously. At the same time, as many mill supply houses throughout the country have added lines of machine tools and have found that the combination of these products with mill supply lines is a profitable one, other supply concerns have become deeply interested in the idea. The canvass being conducted is already bringing many hitherto obscure facts to light, and it may pave the way to future action by both manufacturers and mill supply men. Results of the canvass will be given to manufacturers and distributors within a short time.

OPTIMISM IN DETROIT

It is pleasing to note the optimism with which distributors of machine tools and mill supplies in Detroit have met the fact that there has been a curtailment of production in some of the automobile plants there. In scarcely a single instance where heads of Detroit houses have been asked what effect they thought this curtailment might have on the supply business has there been the slightest evidence of deep concern—and this despite the fact that the automobile and related industries consume a very large percentage of goods sold by these concerns.

The mill supply and machine tool business in Detroit has progressed step by step with the automobile industry. As automobile manufacturing has grown and expanded, so have the businesses of the supply concerns. One mill supply distributor has estimated that fully sixty per cent of his business is with the automobile manufacturers and the industries closely allied to the automobile business. Another has made an even larger estimate of the business his house does with automobile and related industries, declaring that seventy-five per cent of the goods sold by his firm are disposed of to these industries. Yet neither of these men is worried over the slight curtailment of production.

It is generally recognized that the curtailment has been brought about by a combination of unfavorable economic conditions (not the least of which is that there is a general slowing up in demand for automobiles during this time of the year) and that it is only temporary in nature and need not be viewed with alarm. The following paragraphs from a statement issued by the B. F.

Goodrich Rubber Company, Akron, Ohio, regarding the present situation in the automobile industry are noteworthy:

"We are in a situation today which comes almost logically after a great orgy of spending. In a large sense we are experiencing the feelings of 'the morning after.' The consumer, for the time being, has put on the brakes. But he is by no means going to stop, and just as soon as he readjusts himself he is going to assume a firmer stride than ever. Because he still has gaping wants and needs which production has not begun to fill.

"Let us not for a moment lose sight of this latter fact, namely: That production, excepting in a very few commodities, is far in arrears of the wants of the consumer. Herein lies the fundamental ground work for supreme confidence. It should sound the keynote for the higher optimism. It is a solid foundation, upon which everybody can safely stand and truthfully assure himself that American business has in store a sound and promising future."

If the manner in which Detroit mill supply men are meeting existing facts is a true reflection of the attitude of business men throughout the country, readjustment will surely proceed in a sane, successful way. Men who are squarely facing the financial and industrial situation of the day realize that readjustment cannot come without deflation, and that deflation cannot be brought about without an ending of the orgy of useless spending which has possessed the American people for months past. The consuming public has commenced to economize, but in a gratifying and orderly manner. It is economizing by abstaining from many of the unnecessary luxuries and by not overloading with necessities. The present tendency will enable production to reach something like a normal basis, gradually force prices down from their high peak and bring about readjustment in a manner that will make for the continued prosperity of the country.

UN-AMERICAN RESOLUTIONS

The action of the Chicago Federation of Labor in adopting resolutions demanding a general strike if the United States gives military aid to Poland is simply another effort at class rule which cannot but draw the severe censure of every man truly American in his makeup. The fact that members of the federation are opposed to giving military aid to Poland is not the thing which arouses the ire of patriotic citizens, for the federation members are far from being alone in their opposition to such a measure. It is the threat—for the action of the federation is nothing other than a pure and simple attempt at putting a club at the head of the government—that is entirely reprehensible. The resolutions passed by the Chicago federation again clearly demonstrate that it is time for labor to "clean house." It is absolute folly for laboring men to allow themselves to be led into pitfalls by some of the individuals who now hold control in labor organizations. The quicker these men are ousted and invited to join the soviet in Russia, which the resolutions term "a government for and of workers," the better for the men who are paying for memberships in organizations controlled by them.

WATER POWER DEVELOPMENT

News that the water power commission in Washington is working on the provisions of the new federal law which will permit of private development of the country's vast water power resources is particularly gratifying at such a time as this when there is a marked shortage of coal and when one of the most serious problems of the day is the lack of adequate transportation facilities. It is estimated that only 10,000,000 horsepower is at present derived from the flow of waters in this country, whereas estimates of the amount of horsepower available range from 50,000,000 to 200,000,000. The extension of the use of water power in the United States will have a decided effect in relieving the coal shortage. What is more, it will release for other purposes many cars now being used for the transportation of coal. It will make for cheaper and quicker production and will relieve business from many of the worries which are besetting it today.

BENEFITS OF CO-OPERATION

Whenever MILL SUPPLIES conducts a canvass or a campaign on any subject, it is acting for the benefit of the trade, and co-operation from those engaged in the trade will react in a manner gratifying to all concerned. At the present time, this magazine is canvassing manufacturers of machine tools and distributors of mill supplies on the question of machine tool distribution. Letters sent out to manufacturers and distributors have brought an unusually gratifying number of replies, and, as a result, much data of importance has been obtained. There are still a number of both manufacturers and dealers, however, who have not as yet sent in their replies, and we urge them to do so without further delay. MILL SUPPLIES exists for the manufacturers and distributors of mill supplies. Its every action is directed toward benefitting them. Co-operation will bring results. This campaign is being conducted to furnish manufacturers and distributors with exact knowledge of conditions existing in machine tool distribution. A "get-together" attitude will work for the good of all.

Eastern Firm Completes Modern Belting Plant

Jewell Company Observes One Hundred and Fiftieth Anniversary by Erecting New Home—Concern Originated in Small Log Cabin

Completion of a modern new mill construction plant marks the 150th anniversary of the Jewell Belting Company, Hartford, Conn. From a small tannery, operated in Asahel Jewell's little log cabin in Winchester, N. H., in 1770, the Jewell company has progressed steadily until today it is one of the country's leaders in the manufacture of leather belting, strapping, lace leather and round belting.

The new plant consists of seven buildings: The main manufacturing building, which also contains the company offices; the carpenter and machine shop, the hide and leather storage building, the chrome and lace tannery, a boiler house, garage and transformer house. The main building is four stories in height and measures 393 by 60 feet. The carpenter and machine stop is 102 by 60 feet and is two stories high. The hide and leather storage building is 122 by 100 feet and two stories high, and the chrome and lace tannery is 122 by 60 feet and two stories in height.

Leather used by the company is tanned in its own tannery in Rome, Ga., from hides purchased in the west. The tannery represents an investment of $1,000,000 and employs about 100 people, while the main plant in Hartford employs between 300 and 400. The Jewell company also operates a tannery for chrome and lace leather in Hartford.

It is believed that in 1826 Asahel Jewell sold the first leather belt sold for commercial purposes in this country. An entry dated in that year covers the sale of a three-inch belt. In 1846, Pliny Jewell, who had been associated in business with his father in Winchester, opened a tannery in an old barn in Hartford, where he also dealt in hides, sole leather, findings, etc. In 1847, Mr. Jewell took his sons into partnership with him under the firm name of P. Jewell & Sons.

From 1846 until the time of the Civil War, the company occupied various locations. During the war, it was given a great opportunity in furnishing the union army with a large amount of material. The big increase in business made large and permanent quarters necessary, and in 1865 the Rogers silver factory, on the site at Trumbull and Jewell streets at present occupied by the company, was purchased.

Marshall Jewell, the oldest of the Jewell brothers, was prominent in political and diplomatic circles. He was governor of Connecticut twice, ambassador to Russia, and postmaster general under President Grant. Yet he was closely identified with the progress of the Jewell company, and he was ably assisted by his brothers, Lyman, Charles and Pliny.

The business grew to such proportions that the company was incorporated in 1883 under the name, Jewell Belting Company. About twenty-five years years ago, an addition was built to the west of the main plant and connected to the latter by a bridge. During the period of prosperity that followed, all of the Jewell brothers died.

Millions of scabbards and gun slings were turned out by the company during the recent war. After the close of the war, business grew to such an extent that the present quarters were inadequate, and the new plant on twenty-five acres of land on the railroad, opposite Charter Oak, was erected. The old plant was sold to the Aetna Life Insurance Company, and the moving of the Jewell company to its new location marks the passing of the last large manufacturing plant in the business section of Hartford.

Present officers of the Jewell Belting Company are as follows: President, C. L. Tolles; vice-president, E. H. Bingham; secretary and treasurer, E. J. Pearson; assistant secretary, H. E. Hitchcock. The directors are: Edwin H. Bingham, Charles L. Tolles, Edward B. Hatch, Edward J. Pearson, Marshall Jewell Dodge, Arthur G. Newton and Henry M. Sperry.

MAKES EXTENSIVE ADDITIONS

Output of Detroit-Star Grinding Wheel Co. Will Be Increased When Improvements Are Completed.

Extensive additions now being made to the plant and equipment of the Detroit-Star Grinding Wheel Co., Detroit, will give the company an output of from $2,000,000 to $2,500,000 annually, according to officials of the concern.

The Detroit-Star Grinding Wheel Co. was incorporated on October 1, 1919, when the properties and businesses of the Detroit Grinding Wheel Company and the Star Corundum Wheel Co. were taken over. The business consists of the manufacture of vitrified, silicate, and elastic grinding wheels from both aluminous artificial abrasives and carbide of silicon.

Officers of the company are: President, John R. Kempf; vice-president, J. T. Wing; secretary and treasurer, F. H. Whelden. Mr. Kempf was formerly president of the Star Corundum Wheel Co., and Mr. Whelden was formerly president of the Detroit Grinding Wheel Co. Mr. Wing is president of J. T. Wing & Co., Detroit, which company will be Michigan distributor for the Detroit-Star Grinding Wheel Co.

AD REPRODUCTION VALUABLE

Repetition of an Advertisement in Later Copy Often Prolongs Influence and Brings Results.

The importance of prolonging impressions delivered and of lengthening the influence of advertisements is well set forth by Arthur McClure in an article, "Making an Advertisement Score Twice," which appeared in a recent issue of Printer's Ink.

Mr. McClure shows how the reproduction in miniature of an advertisement in later publicity often recalls to the mind of the reader his interest in a certain article, and spurs him to action. He also sets forth the advantage of succeeding advertisements carrying a reproduction within a reproduction, although the second reproduction is too small to do anything but remind the reader of the idea, which reminder serves the general purpose.

"Doesn't this little scheme do something else, too?" writes Mr. McClure. "It enables an advertisement to carry credentials. It says to the reader 'You must remember me! Here is my father and grandfather. Behold my pedigree.'"

Machine Tool Sales Aided by Supply Business

Mill Supply Houses Handling Machine Tools Find Combination Pays—Strelinger Company, Detroit, Attains Success

Is the mill supply house the logical distributor of machine tools? Is it to the machine tool manufacturer's advantage to distribute his products through the dealer in mill supplies? Is a machine tool department an important adjunct to the business of the mill supply house?

Desire to obtain expressions of opinion on these questions from successful supply dealers led MILL SUPPLIES to send a representative to Detroit recently for the purpose of making a canvass of some of the larger houses in that progressive city. The canvass indicated that mill supply houses which have given the machine tool business a thorough tryout are convinced beyond the shadow of a reasonable doubt that machine tools and supplies go hand in hand, that the machine tool department, if conducted properly, is a feature which supply houses cannot well afford to ignore, and that the machine tool manufacturer can secure no more efficient distribution of his products than through the mill supply house.

The writer visited houses which conduct machine tool business on an extensive scale, houses which handle only the smaller machine tools in a limited way and still other houses which have practically no machine tool business at all. He found two or three men who were dubious as to the advisability of mill supply houses handling machine tools extensively. They were of the opinion that machine tools would eventually be handled almost exclusively by purely machinery houses. Their principal objections to the distribution of machine tools by mill supply dealers were the necessity for carrying stocks of machine tools on hand and the small margin of profit allowed by machine tool manufacturers. He found others who believed that machine tool business can be profitably conducted by supply houses if it is handled separately and under a department head who is an expert in machinery. He found still others who have thoroughly tried the combination of machine tools and mill supplies and who are absolutely convinced that untold advantages accrue to the manufacturer, distributor and user of machine tools when the distributor is at the same time a dealer in mill supplies, that the mill supply business builds the machine tool department and vice versa; that the combination is logical and practical.

Notable among men of the latter opinion is Charles T. Bush, the progressive vice-president and general manager of The Chas. A. Strelinger Co., one of the largest distributors of machine tools and mill supplies in the United States. During practically its entire history, the Strelinger company has combined the machine tool business with that of mill supplies. It carries at all times in its big six-story and basement building one of the most complete stocks of machinery, machine tools and supplies in the country. It has conducted both the machine tool and mill supply branches of its business on an extensive scale and has attained marked success.

Mr. Bush would not countenance the suggestion that machinery houses would eventually be the sole distributors of machine tools. He pointed to the fact that many exclusive machinery distributing houses had sprung up during the war and that they have existed during unusually good times, when the demand for machinery and machine tools has been heavy. What success they will have during periods when the demand is not so heavy is problematical, he said. On the other hand, he pointed out, the house which handles both machine tools and mill supplies always has one phase of the business to aid the other. Profits in the machine tool and mill supply business come only through volume of sales and the combination of the two factors makes heavy sales more probable.

Mr. Bush proceeded to cite argument after argument in favor of the combination of the machine tool and mill supply business. One of the greatest benefits of the combination is the co-operation that may result from it, he said. If a customer visits a house to buy mill supplies and is also contemplating the purchase of machine tools, the mill supply salesman can refer him to the machine tool department. The results are more satisfactory to the buyer if he can obtain all the goods he needs from one house. He has one account and he can be assured of better service. If he has been satisfied with the service he has received from his dealings with a firm in mill supplies, he will be inclined to give that same house his machine tool business.

"When a man is starting in business, he first needs his preliminary supplies, then his machinery and machine tools and finally his supplies other than his preliminary supplies," said Mr. Bush. "If he can obtain all of these things from one house, the arrangement is much more satisfactory to him and to the house itself than would an arrangement whereby he makes his purchases from various houses.

"The handling of machine tools by supply houses also brings big savings to manufacturers who use them. It is well enough for the machine tool manufacturer to distribute through his own representatives, but if one of the automobile manufacturers in Detroit, for instance, should need certain machine tools immediately and had to wait some time before he could obtain them from the maker, he would suffer loss in time and money. If he can secure them from a house in his own city, all of this loss is eliminated."

One of the most necessary factors in the successful promotion of machine tool business by mill supply houses is the acquisition of good lines, Mr. Bush declared. A mill supply house with good lines of machine tools has splendid opportunities.

The Strelinger company carries large stocks of new and used machinery, machine tools, parts, and all kinds of factory and mill supplies. It uses as its slogan, "Everything for the Shop," and a trip through the building convinces one of the efficacy of that slogan.

Although the Boyer-Campbell Co. is not a distributor of machine tools, A. R .Smith, vice-president of that organization, declared his belief that mill supply houses can conduct machine tool businesses successfully if the machine tool department is entirely separate from the mill supply business and is conducted by men thoroughly familiar with machinery. This

separation between departments is, in his opinion, a requisite for the proper conduct of the machine tool business.

The T. B. Rayl Co., another of Detroit's larger supply houses, handles machine tools only on a small scale at the present time and does not now represent any closed lines. The machinery sales department is in charge of E. C. Baynes and may be said to be still in an incipient stage. B. H. Ackles, manager of the factory supply stores of the Rayl company, is of the opinion, however, that, if properly conducted, the machine tool department may become an important factor in the business of a supply house, and he expressed himself as believing it probable that after the due course of development, machine tool sales by the Rayl company will be greatly expanded.

An official of another Detroit house, which is a big distributor of machinery and machine tools, declared emphatically his belief that the machine tool and mill supply businesses should go together.

"If a salesman for a house which handles machinery and machine tools exclusively makes a call, and the prospective purchaser is in need of neither, then his sales possibilities end," he said. "But if he has also a good line of supplies, he has much more to offer and his sales are greater.

"We always have in stock a big assortment of parts and supplies that will be needed by purchasers of machinery and machine tools in connection with those products. It is undoubtedly a fact that the purchaser will be better satisfied if he can obtain his machine tools and supplies in the same place."

Another point of importance brought out in the interviews with the heads of Detroit houses is the fact that the matter of credit is more easily adjusted when a new firm obtains its machine tools and mill supplies from the same concern. The distributor of machine tools can make more satisfactory credit arrangements with a new house when he knows that that house is purchasing its supplies as well as its machine tools from him and that there is no division of credit. The arrangement is also generally more satisfactory to the heads of the new house, from the points of view of both service and credit.

Conclusions to be drawn from the canvass of Detroit houses are that supply concerns which have had considerable experience in handling machine tools are thoroughly convinced of the efficacy of the machine tool department, that the supply and machine tool departments are constant helps to one another, that the purchaser of machine tools will derive greater satisfaction if he can buy his machine tools and supplies from the same firm and can call on that firm for parts or new equipment at any time and receive prompt service, and that the manufacturer of machine tools will find in the mill supply house the best distributor of his products.

TO OCCUPY MODERN PLANT

Flexible Steel Lacing Company, Chicago, Will Move Into New Factory Building on September 1.

The Flexible Steel Lacing Company, Chicago, has announced that it will occupy its new plant at 4607-4631 Lexington street on September 1.

Work in constructing the new factory has been in progress for some time. The building is 265 by 126 feet in dimensions, has 36,000 square feet of floor space and is made of brick and reinforced concrete. It is of modern mill construction and has excellent daylight advantages. Except in the center, the structure is one story in height. The offices will occupy the second floor in the center of the building, an area of 2,000 square feet.

The new building is the culmination of a steady growth in business since the company was organized in 1907. Officials state that this modern factory will add fifty per cent to the company's manufacturing capacity. There is also additional room on the property acquired to triple the capacity of the plant.

George E. Purple is president of the Flexible Steel Lacing Company, H. J. Beach is vice-president and P. S. Rinaldo, secretary and treasurer. Mr. Purple, Mr. Rinaldo and the late A. B. Beach, father of the present vice-president, were the organizers.

The entire facilities of the new plant will be devoted to the manufacture of Alligator steel belt lacing, high duty belt fasteners, Turtle belt fasteners, Flexco and Flexco-Lok lamp guards, with which products the company has attained marked success.

REPUBLIC COMPANY FORMED

Baltimore Concern Will Make Stitched and Woven Belting To Distribute Through Supply Houses.

The Republic Belting Company, Inc., Baltimore, Md., has been organized with a capitalization of $200,000 for the purpose of manufacturing stitched and woven belts. Of the capitalization, $100,000 is eight per cent preferred stock, cumulative as to dividends, and the remainder common stock.

Construction of the new plant of the Republic company, which will be located on the Albrecht property, fronting on Smallwood street, is in charge of Huldreich Egli, a well known industrial engineer. The plant will extend a full city block from Pratt street to McHenry street, a distance of 256 feet.

Charles H. Dankmeyer, for many years general sales manager of the Gandy Belting Company of Baltimore, is president of the new company, while Thomas H. Fitchett is treasurer. The superintendent of the new plant will be a man who has had long experience in the belting business. Officials of the company hope to commence operations in October.

The stitched belt to be manufactured by the Republic company will be oil filled and painted red for general purposes, and will also be supplied saturated in an asphaltic composition for special purposes. The woven belt will be supplied in either white or black. The company has secured a patent on a special fabric and is attempting to register the brand, "Duratex."

The output of the Republic Belting Company will be distributed through supply houses located at the principal jobbing points. President Dankmeyer believes that the ideal belt selling method is to have a stock of the company's products in the hands of the jobbing trade. The company hopes to secure jobber representation throughout the country.

Organization Meeting Held

Discussion, in the nature of a general survey of the field, and the election of a nominating committee featured the organization meeting of the materials handling section of the American Society of Mechanical Engineers in the Engineering Societies' Building, New York, August 13.

More Than a Century in the Supply Business

Peter A. Frasse & Co., Inc., New York, Originated as Small Clock and Watchmakers' Supply Shop Early in Nineteenth Century

Back in the early history of New York City, when the great metropolis was scarcely out of its infancy, there arrived in Manhattan an earnest and energetic young man bearing splendid credentials from a well known Swiss manufacturer of machinery, by whom he had been employed for several years. Now, more than a century later, there stands in New York a substantial business building housing one of the city's leading supply houses as the outgrowth of that young man's early efforts. The origin and development of the business of Peter A. Frasse & Co., Inc., is synonymous with the growth and development of the machine tool industry of America.

Born in Switzerland, Henri Frederic Frasse was a direct descendant of one of the oldest families in Savoy. In Switzerland and in Italy, he had learned much of the watch and clockmakers' trade, and with the careful training that was characteristic of European apprenticeships, had become an expert mechanic and an expert at small tool and machinery making. It was in about 1800 that young Frasse, still youthful but well equipped with the keen discernment and balanced judgment of maturity, felt that he had learned enough of his trade in his own country, and yearning for a broader scope for his energies and ambitions, sailed for America. Here he soon obtained employment as a draftsman in a leading manufacturing plant. While this required a thorough knowledge of mechanics, it gave him no opportunity to exercise his rare ability in the handling of small tools or to develop his natural business ability, so a few years later he established himself in a shop of his own at 95 Fair street, afterward named Fulton street in honor of Robert Fulton.

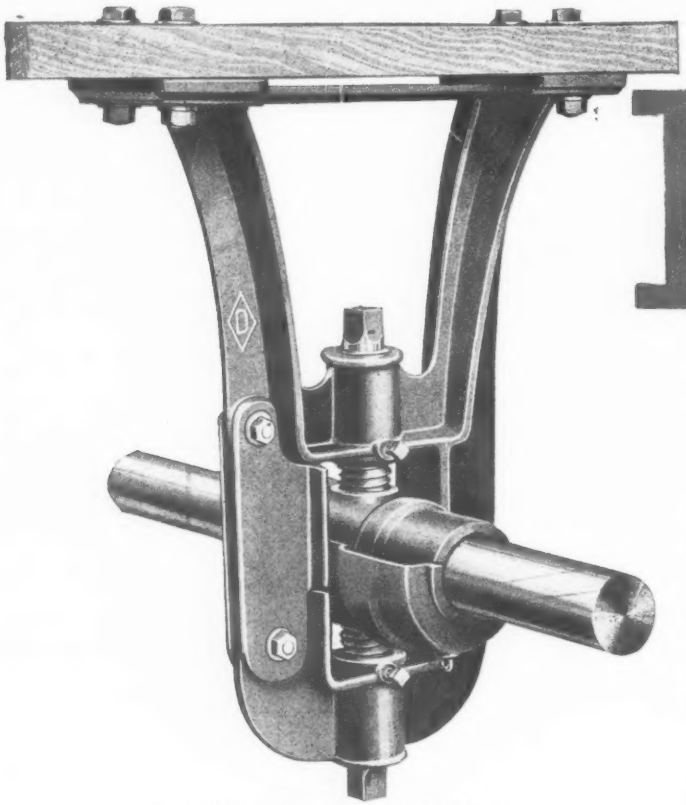
As a dealer in watch and clockmakers' supplies young Frasse's reputation soon became general throughout the rapidly growing city. His little shop was known not only as a headquarters for the best materials in the line, but as a safe place to bring anything requiring difficult repairing, from a clock to an engine. He attempted anything from the most delicate watch repairing to the most intricate model making. About this time, Robert Fulton was busy with plans for an engine with which he was to realize his dream of a steam propelled vessel. He needed a working model made from his plans and, naturally, he went to Henri Frasse. The model proved a complete success and Fulton took it to England, where, in Boulton & Watt's plant was built the larger engine for Fulton's famous "Clermont." Later Frasse assisted Fulton in perfecting other inventions, including a fighting ship, floating mines and torpedoes.

General offices and warehouse of Peter A. Frasse & Co., Inc., in New York

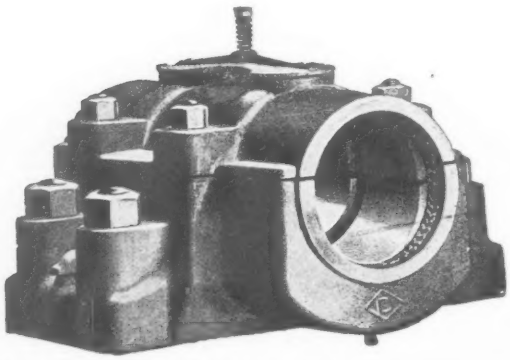
In 1816 Henri Frasse, recognizing the increasing demand for materials used in the clock and watchmakers' trade, opened a store in conjunction with his little shop, introducing a more complete and varied stock of jewelers' supplies, and commenced importing fine tools, such as files, pliers and nippers, for in those early days there were practically no tools made in this country. Thus, he became the first extensive importer of fine tools in the United States and established what has been justly termed the "root of the machinists' supply trade in New York City."

Henri Frasse had two sons, Henry Frederic and Peter A., both of whom were destined to sustain the reputation of the name in the machinists' supply business throughout the second generation. The elder son went to Switzerland where he learned the trade of toolmaker, and, after returning to this country, went into business for himself at 62 Chatham street, New York. Peter A., the younger son, entered into business with his father in 1844, and when the father

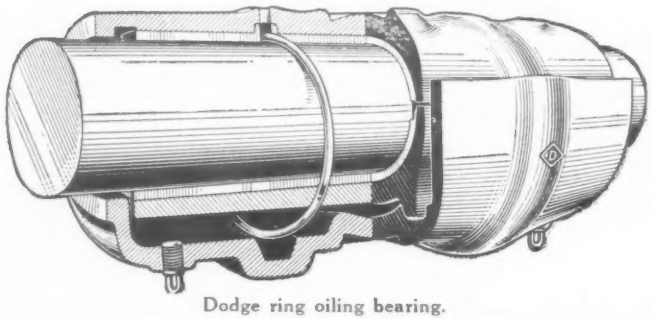
(Continued on Page 44.)



Dodge ball and socket adjustable drop hanger.



Dodge heavy rigid pillow block with spring cover oiler and dust proof ends.



Dodge ring oiling bearing.

DO

Hangers and

Making good hangers and bearings begins with the selection of the right material.

The iron used in making Dodge hangers and bearings is chemically analyzed and must be up to the high Dodge standard.

The strength and rigidity of the hanger, once the quality of the iron is determined, depends on its design, to a far greater degree than in its weight.

Dodge hangers are the result of more than thirty years of study and experiment. Their design assures the utmost strength and rigidity.

Dodge hangers are made in Dodge shops by Dodge workmen. They are machine moulded from metal patterns. Freedom from flaws and good appearance are characteristic of the entire line from the smallest to the largest. Dodge hangers are serving every industry in every section of the country to the entire satisfaction of their users.

Dodge Sales & Engineering Company, distributor of t
Pulley Corporation. General Offices: Mishawaka, In
Canadian Plant: Dodge Mfg. Co. o

Philadelphia Cincinnati New York Chicago St. Louis Boston Atlan

DODGE

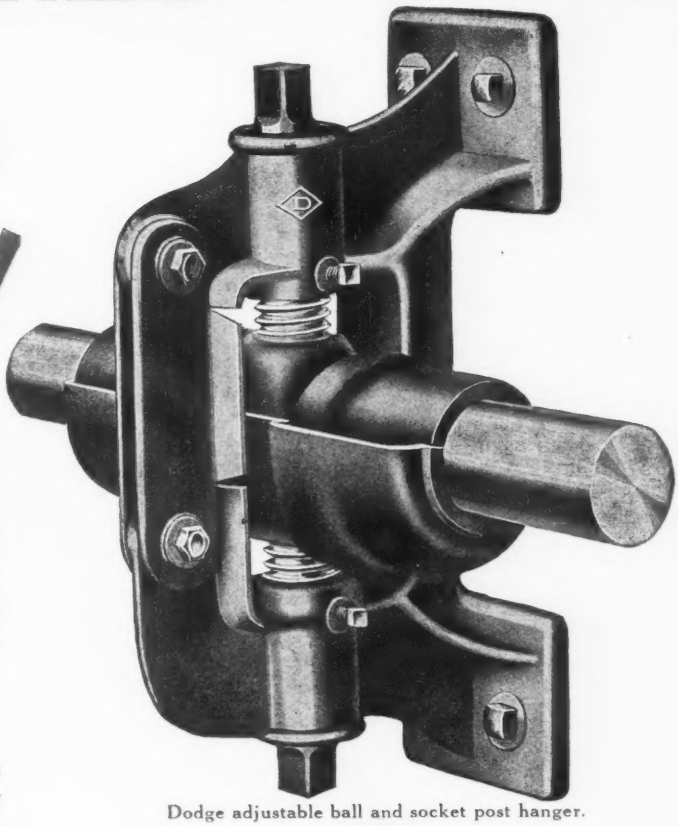
Bearings

Their side opening makes them easy to erect and align. The shaft and its equipment are supported by the hanger frame. With hangers that open at the bottom this weight must be supported by main strength or by a hoist while adjustments are being made.

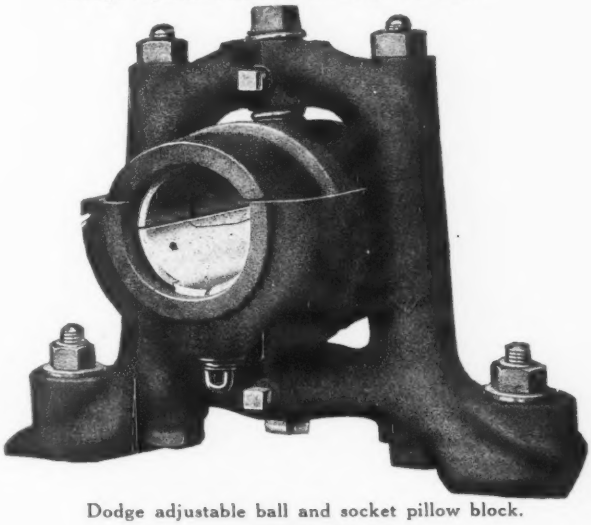
Dodge bearings are built so that the shaft floats on a film of oil. By reason of their ball and socket fitting, they follow the direction of the revolving shaft without binding.

Large oil reservoirs and positive methods of lubrication are provided. Dodge hangers and bearings are distributed from fourteen warehouses located in fourteen power using centers. These warehouses are stocked with every standard size, and shipments are made the same day the order is received.

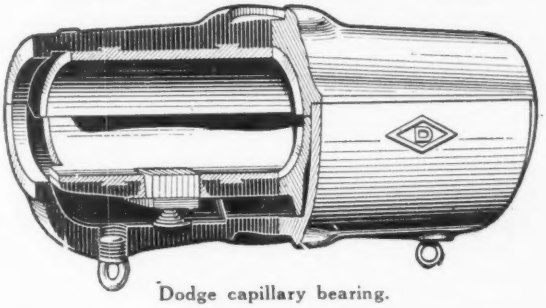
If you want to sell the most widely used and known line, if you value satisfied customers, if you want prompt deliveries, write today for our dealers' proposition.



Dodge adjustable ball and socket post hanger.



Dodge adjustable ball and socket pillow block.



Dodge capillary bearing.

ucts of the Dodge Mfg. Co. and the Dodge Steel
ks: Mishawaka, Indiana, and Oneida, N. Y.
ada, Ltd., Toronto and Montreal

Pittsburgh Minneapolis Houston Providence Seattle Newark

(Continued from Page 41.)

died, in 1849, the business passed in accordance with his expressed desire to the younger son, Peter A. Frasse, who changed the title of the firm, using his own name instead. He conducted the store with continued success until 1868, when a new member came into the firm in the person of James M. Montgomery, and the title of the house was changed to Peter A. Frasse & Company. About this time the business took on new life owing to the advent of American made tools and supplies. In 1876, James M. Montgomery branched out for himself, founding a concern known as James M .Montgomery & Company, thus establishing another supply house catering to the same line of trade. After Montgomery left the Frasse company, Charles Frederick, a son of Peter A. Frasse, was taken into the firm, and a year later John L. Howe, who was destined to play an important part in the business, entered the company's employ. The following year, in 1878, Peter Frasse advertised for an errand boy, and out of fifty applicants he chose Adolph E. Brion, who later became a dominant and important factor in the affairs of the concern. By this time the company was handling a complete line of machinists' tools of both American and foreign manufacture. The business increased until it was found necessary to tear down the old building at 95 Fulton street and erect a more commodious structure. In two years' time, young Brion had developed such excellent business ability that he was made city salesman and delegated to handle the commercial possibilities offered by the electrical industry, which was then coming into prominence.

After the death of Peter A. Frasse, in 1891, the business was incorporated with John L. Howe as president and treasurer, and Adolph E. Brion as secretary. By 1898 the company had outgrown its building at 95 Fulton street and new quarters were taken at 94 Fulton street.

President Howe's death occurred in 1901, and in that year Adolph E. Brion was elected president of the company, with John Briggs as treasurer and Roscoe C. Stacy as secretary. From the beginning of Mr. Brion's administration an immediate growth took place in the volume of the company's business, and the capital stock was largely increased. Quarters were gradually added to until in 1910 a site was selected at the northwest corner of Canal and Sullivan streets and construction begun on the modern fireproof building which is now the home of the company. Frederick O. Becker, secretary of the company, is manager of the tool and supply department which carries a large stock of tools, machinery, machinists' and mill supplies. In its electric steel plant, in Hartford, Conn., the company manufactures electric and open hearth steel, cold drawn screw steel, shafting, and polished drill rods. Branch houses for the sale of steel products are located in Philadelphia and Pittsburgh. No effort is spared by the management to fully live up to the company's slogan of "Quality First—Service Always."

IS NOW COUNCILLOR SMITH

Southern Supply Association Official to Represent Organization in National Chamber of Commerce

Alvin M. Smith, secretary and treasurer of the Southern Supply and Machinery Dealers' association, Richmond, Va., has been named national councillor of that organization, to represent it in the Chamber of Commerce of the United States.

The national council of the Chamber of Commerce of the United States consists of one representative each from the more than thirteen hundred commercial and industrial organizations making up the national chamber's membership. It serves as an advisory body to the national chamber's board of directors. The council holds a special meeting proceding the annual convention of the national chamber to pass on the program and to select a nominating committee. The councillors also act as chairmen of the delegations representing their organizations.

A councillor occupies a position of liaison between the national chamber and his own organization on important questions.

The Chamber of Commerce of the United States is the strongest commercial organization in the world. Its object is to encourage trade and commerce, to increase efficiency of American business organizations, to obtain uniformity and equity in business usages and laws and to get proper consideration and concentration of opinion on questions affecting the financial, commercial, civic and industrial interests of the country at large.

A system of referenda operated by the chamber has met with unusual success in obtaining the viewpoint of business men on national questions. These opinions, when they point to the need of legislation or other governmental action, are transmitted to the government's executive officers and to congress by the national chamber's headquarters at Washington.

DODGE OFFICIAL NOMINATED

W. L. Chandler Proposed as National Safety Council Director—Congress in Milwaukee This Month

W. L. Chandler, assistant treasurer of the Dodge Sales & Engineering Co., Mishawaka, Ind., is a member of the representative directorate proposed by the nominating committee of the National Safety Council for selection at the Ninth Annual Safety Congress in Milwaukee, September 27 to October 1. Twenty-five industries are represented on the proposed directorate.

Four thousand men and women—safety engineers, industrial relations managers, municipal traffic officers, educators and plant executives will attend the big Milwaukee meeting. One hundred and eighty speakers, each an expert in some particular line of safety work, are on the program, which will include discussions of the best methods of saving fingers, hands, arms, legs and lives and of conserving labor and increasing production through accident prevention and industrial medicine. A special session of the congress has been arranged for beginners in the field of organized accident prevention to receive instruction in these fundamentals.

Future Market in Chile

C. L. Goodrich of Pratt & Whitney Co., Hartford, Conn., who has returned to this country after a trip to Peru and Chile, sees possibilities for a large machine tool market in Chile in the future. In a recent interview he emphasized the fact that this prospective large market is one of the future, rather than of the present, however.

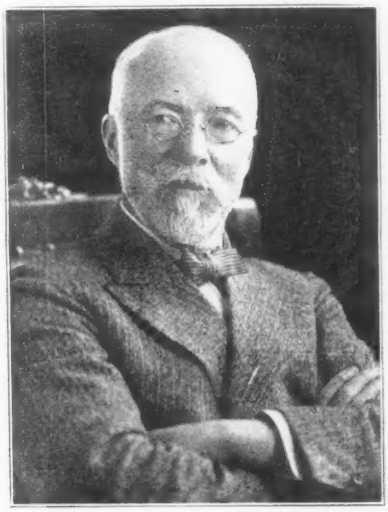
Introducing the Customer to the Inside Man

How The T. B. Rayl Co., Detroit, Develops Its Employes' Individuality—Operation of Big Supply House Unique in Many Ways

Believing that the personal element is a vital factor in the promotion of business relations, The T. B. Rayl Co., Detroit, Mich., has adopted novel and interesting methods for laying stress on the importance of the individual employes of its factory supply store.

As is the case in many of the larger supply distributing houses throughout the country, the greater number of the company's city sales are made over telephones. The men who take the telephone orders are not merely mechanical operators. They are employes who are thoroughly versed in all phases of the company's supply business. They are salesmen as well as operators. Ordinarily, these telephone order takers graduate into the ranks of city salesmen. The city salesmen visit prospective customers continually, keeping in touch with customers and drumming up business. But the number of orders they bring in is very small in comparison with those taken over the telephones.

ALEX PATON



DUDLEY W. SMITH

Officials of the Rayl company have found that results are more satisfactory all around when the telephone salesmen are known to the buyers who call up the house. For this reason, these order takers frequently visit the trade, making new acquaintances and renewing old ones.

A blotter which is sent out by the factory supply store is another means of introducing employes to customers. This blotter contains the names of every person in the supply store with whom outside firms would ordinarily come in contact, from B. H. Ackles, manager of the store, to the telephone order takers. In the center of the blotter under the caption, "Telephone Directory," are the names of the members of the phone order department, the city buyer, the purchasing agent, the manager of the machinery sales department and the heads of the claims, pricing and back order departments. To the left and right of this center section are the names of the city salesmen. In the lower left and right hand corners are the names of the state salesmen and their addresses, and in the center, at the bottom, is Mr. Ackles' name.

"We believe in attaching real individuality to our employes and our plan has worked out very successfully," said Mr. Ackles recently. "The result of our system is that when a buyer calls up, he will ask for Mr. Harris or Mr. Campbell or one of the other members of the phone order department. If a man wants to know something about prices, he will ask for Miss Reid. The back of our blotter is made of such material that the names cannot be easily rubbed off, and the man who deals with us has this directory always before him."

Another interesting feature of the operation of the factory supply store is the "Black Book" which is kept by Mr. Ackles personally. In this book, under the name of each employe, is kept a list of errors made by that person. If the errors of one employe grow too numerous, Mr. Ackles calls him in and "talks it over." The "Black Book" has brought remarkable results in eliminating mistakes. Mr. Ackles also keeps a book in which are recorded the calls made by salesmen each day. This factor has tended to aid the efficiency of the sales force.

The Rayl company maintains a system of co-operation with some of the manufacturers for which it acts as distributor which is, in many ways, different from the plans used by the majority of the supply houses of the country. Representatives of the Greenfield Tap & Die Corporation, the Minnesota Mining & Manufacturing Co., makers of sandpaper and emery cloth; The Hockaday Company, paint manufacturers; the Standard Tool Co., the L. S. Starrett Co., manufacturers of fine machinists' tools, and the Sparta Saw Works keep representatives with the Rayl company at all times. Although these representatives' salaries are

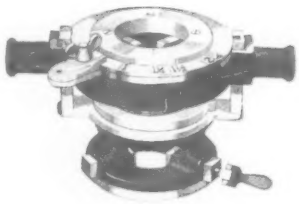
1920

Some Beaver Year!

As the 20th year of this business, we have called this the Beaver Year and requested special efforts on the part of all employees toward greater care and increased production.

We are glad to announce that our shipments for the first six months of 1920—the Beaver Year—were 79 per cent. greater than for the same period last year.

For this record we are indebted to the energy, enthusiasm and loyalty of the whole Beaver organization.



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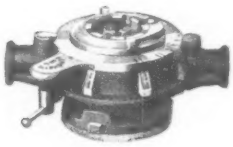
1 to 2-inch



No. 6
¼ to ¾-inch

THE BORDEN COMPANY

SQUARE-END PIPE CUTTERS · BEAVER · Quality Tools · EASY-WORKING DIE STOCKS

WARREN, OHIO, U. S. A.

BORDEN-CANADIAN CO., 110 CHURCH STREET, TORONTO

paid by the manufacturers, they are treated much the same as employes of the Rayl company. Every order that goes out from the territory goes through Rayl's, and the keeping of manufacturers' representatives there has no effect whatever on the Rayl company's status as distributor.

According to Mr. Ackles, this plan of co-operation works out very successfully. The combination of the

B. H. ACKLES

representatives' knowledge of the products with the sales co-operation that can be given through their connection with Rayl's is ideal. Through the Rayl company's acquaintance with prospective customers and through its dealings with other firms in different lines of supplies, the sales possibilities of these manufacturers' goods are greatly enhanced.

The Rayl company recently commenced handling interior paints manufactured by The Hockaday Company, Chicago. Representatives of The Hockaday Company entertained employes of the factory supply store and builders' hardware department at a dinner at the Fort Shelby hotel. H. P. Yenowine, sales manager of the Chicago concern, Mr. Stable, assistant sales manager, and J. H. Walker, Detroit representative, were present and discussed the product and its possibilities with the Rayl employes. The acquisition of the paint line met with the enthusiasm of the Rayl workers.

The T. B. Rayl Co., has six separate departments: The kitchenry or house furnishing, sporting goods, retail tool, builders' hardware, laundry supply and factory supply departments. All but the latter department are in the store building at 9 Grand River avenue, east. The factory supply store is at 72 Congress street, west. The company was established in 1875 and is one of Detroit's oldest and best known houses. Its capitalization is $400,000, and the average stock amounts to about $500,000. Both of the buildings operated by the company are completely stocked, and operated on the most thorough and efficient plan.

Officers of the Rayl company are as follows: President, Dudley W. Smith; vice-president, Alex Paton; secretary-treasurer, Charles A. Bachman; general manager, John A. Brown. The company was established by T. B. Rayl and Dudley W. Smith. Mr. Rayl died about fifteen years ago, and since that time Mr. Smith has been active as president of the company. Mr. Paton, the vice-president, is one of the best known men in the mill supply trade and has been an important factor in the progress of the Rayl house, while Mr. Bachman and Mr. Brown have been prominent in the company's activities. The directors are Messrs. Smith, Paton, Bachman, Brown and R. Mathieson.

B. H. Ackles is manager of the factory supply store. Paul Morrow is purchasing agent and F. W. Felden is the city buyer. E. C. Baynes is manager of the machinery sales department, H. E. Cooper of the claims department, Miss M. I. Reid of the pricing department, and E. W. Cuyler of the back order department. The state salesmen are C. F. Bidwell, with headquarters at Flint, and J. E. Robison, at Grand Rapids. A. W. Keppler, L. E. Doerr, C. D.

Section of The T. B. Rayl Company's factory supply store, showing an unusually complete stock of Machine Bronze, manufactured by the Lumen Bearing Company, Buffalo, N. Y.

Stryker, J. M. Warren, F. Schmekel and W. D. Key are the city salesmen, and the members of the phone order department are Ed. Bernstein, Ray Harris, Dud Campbell and Max. Loschburg.

Prepare For Big Exhibition

Much interest is being displayed in the twenty-fifth annual convention of the American Foundrymen's Association, Inc., which will be held in Columbus, Ohio, during the week of October 4, and the fifteenth annual exhibit of foundry and machine shop equipment and supplies to be held in conjunction with it. A group of buildings has been secured on the state fair grounds in Columbus, and all association activities, including meetings of the technical department and the big exhibit, will be staged there, as well as a considerable portion of the entertainment. The association has sent out circulars, one shownig the space plan and giving rules and regulations covering exhibits, and the other containing photographs of striking displays in last year's exhibit. Applications are already on file for 60,000 square feet of exhibit space.

THE MAJORITY of the publishers of this Country believe that their advertising space is a real commodity and well worth the price demanded.

They believe that the right price of space should be determined by circulation.

They invite the closest scrutiny of their product and provide positive proof of its value by their membership in the

Audit Bureau of Circulations

Through membership in the A. B. C., they also endeavor to discountenance the unfair competition of publishers who misrepresent circulation facts to advertisers.

The advertiser who buys space in an A. B. C. paper invests his money wisely and encourages a high ethical standard in the publishing business.

The advertiser who buys space in a non-A. B. C. paper is, to say the least, taking a chance and may be placing a premium on questionable methods.

MILL SUPPLIES is a member of the Audit Bureau of Circulations. Its A. B. C. report and rate card will be sent on request.

MILL SUPPLIES
"the journal of quality"
537 South Dearborn Street
CHICAGO

Public Opinion Must Prevent All Class Rule

Country Must Adhere to Fundamental Principles of Government and Citizens Must Stand For Their Rights Against Groups

CHARLES A. EATON

(Copyright, 1920, by Trade Press Feature Service, Inc.)

"We, the People," have about used up the inheritance bequeathed to us by those deathless generations, out of whose service and sacrifice our country was born. It will not do for us much longer to seek to satisfy our finer feelings by repeating striking passages from the Declaration of Independence or by impassioned waving of the old flag.

Because we are "the people," we are responsible for all that we are and all that we have. This is our country. It belongs to us and we belong to it. Our judgment, expressed as a verdict of public opinion, settles all questions, solves all problems, determines all policies, accepts or rejects all leaderships. Our history is the story of the world's greatest experiment in working the principles of democracy under republican forms. And our future will be just what we make it.

What then are our most urgent duties, our most pressing dangers? What is the big task and burden which the great war has laid upon us as a nation?

We were slow in getting into the war. But there were extenuating circumstances. Our great tradition for a hundred and forty years was to avoid entangling alliances. We desired and insisted upon splendid isolation from other nations. We had a rich undeveloped continent to settle and exploit, civil and economic institutions to organize, fundamental domestic problems, created by our very progress, to solve. Under the challenge of this complex task, we lost the power to think on world terms. Our opportunities and rewards claimed our whole attention.

It is surprising that when the war broke upon the world it did not take longer for our vast, diversified population to throw off the spell of our ancient tradition, acquire a new point of view, and establish a new relationship with the other nations. We did these things in less than three years and, although the field of battle was three thousand miles across the seas, we marshalled the whole resources of the country for the struggle. Never was the nation more completely united in purpose and feeling and in its sacrificial response to a great duty.

The year of peace has been more difficult than the war itself. And the storm center has been and probably will continue to be industry.

Peace brought reaction. In addition to the domestic confusion following the sudden placing of our whole economic and political machinery upon a war footing and the equally sudden swing back to peace, there poured out of Europe a turbulent tide of insane theories of government and industry which, mingling with our disturbed and uncertain condition of mind, threatened to swamp us.

Organized labor grew enormously in power and influence during the war. Under stress of external danger, the government adopted the policy of settling labor disputes by simply granting labor's demands. This was like feeding red meat to lions, for the appetite grew faster than the supply of provisions. As a result, organized labor emerged into the era of peace with a consciousness of power, a truculence of mental attitude, and a relentless determination to get what it wanted by force, regardless of consequences to the rest of us.

Dr. Eaton here concludes his series of five articles on the duties of the various factors concerned in bringing about and maintaining happy and successful industrial relationships, with a discussion of the responsibilities of the greatest of all these factors—the public.

The writer has taken up in successive articles the duties of the employer, the wage earner, the plant superintendent and the labor leader. His discussion of the parts these instruments of industrial progress must play if there is to be lasting contentment have been illuminating.

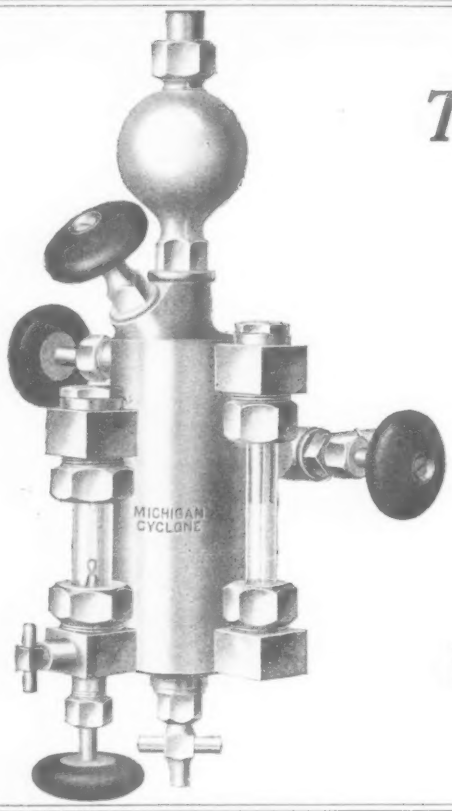
While everyone may not be in accord with all of the statements made by Dr. Eaton in outlining his ideas of the duties of the public, his arguments are worth the serious consideration of every reader. He presents this subject in the same forceful manner in which he has brought out his points in his other articles.

The question has been raised by the steel strike, the coal strike and many other ruinous attacks upon the peace and prosperity of the people as to whether we are to be governed by one class in the interests of that class alone, or by all the people in the interests of all the people. And there can be no doubt as to the answer. This is a democracy in which no class can be permitted undue privileges. The general rights of all are paramount over the rights of any group. And no group is now or ever will be privileged enough or powerful enough to sieze the reins of government after the manner of the Bolshevists in Russia.

The first duty of the public in America at the present time is to prepare for the burdens of peace as we were forced to prepare for the burdens and sacrifices of war. This means careful and open minded study of the new and necessary relations established between our country and the rest of the world by the war, and, at the same time, a resolute acceptance of the burdens of world responsibility which we must carry unless we are ready to give up our proud position as chief among the free nations.

It means, further, that we must see to it that American citizenship becomes a pledge of safety for every one of our people who goes about his lawful business in any part of the world. We demand life itself from our citizens if the country is attacked. And the citizen has a right to demand that our last man and last dollar shall be given in his defense when he is about his lawful business in other lands.

We cannot solve the problems of the peace here at home by breaking the country up into self-centered cliques and classes. We must work as a nation if we are to function at all. And we must stand by our fundamental principles of government and life at any cost. This country is built upon a definite political ideal. And this political ideal must dominate all persons and policies



Tried and Proven

Over thirty years of service have established the reputation of the Cyclone Lubricator in all parts of the world.

The Cyclone is made in various models to suit every requirement and is carried in stock by all the leading jobbers.

Write for Cyclone Circular

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MA-54

The Plant Behind the Product

We Manufacture

"V-B" (Victor Balata) Belting

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Canvas Stitched Belting

Rolls, Tractor and Thresher Endless

We Carry, Ready for Immediate Shipment, Large and Complete Stocks at Our

New York Store, 38 Murray St.
Boston Store, 85 Purchase St.
Chicago Store, 167 N. Market St.
Factory, Easton, Pa.

Victor Balata & Textile Belting Company

Main Sales Office: 38 Murray Street, New York, N. Y.

within the nation. We must foundation our industry, trade and commerce upon this political ideal. We cannot permit industry to change for its own purposes our fundamental political principles. Either we must be American all through or we cannot be American at all.

It is high time that we set about the task of Americanizing America. The chief trouble at the present moment lies in the fact that those central ideals and principles upon which our nation rests are overflowed by a muddy stream of hybrid ideas, imported from and with the backward peoples of Europe.

Socialism, Communism, class rule, proletarian despotism, all are here in force, and offer themselves under a thousand guises and disguises for acceptance in the place of our old-fashioned American democracy.

We have reached the point of complete saturation by foreign immigration. We must shut off the invading stream until we have had time to absorb the undigested and indigestible mass already accumulated. No plea for more labor must be permitted to turn us from this decision. We have plenty of labor to do all that needs to be done in this country if every one will go to work. And we can increase the quantity of our labor enormously by improving the quality of the laborer.

Our task now is to build men who are American in soul. It would be madness to build more houses unless we use them to shelter Americans. And riches created by industry will make us poorer rather than richer if they fall into the possession of un-American men.

We have in the millions of aliens among us a national asset of enormous value. The majority of these folk are capable of becoming real Americans. But we have given them no chance. We have been false to them and false to ourselves. They have been left to the agitators and self-seekers, while we have been chasing rainbows and making ourselves at home in a fool's paradise.

Let us demand that American workmen and their leaders give attention to teaching their fellows of foreign origin what Americanism is by precept and example. Let us turn our industrial plants into schools of loyalty and real manhood. Let the churches carry their gospel of spiritual brotherhood out into the unbeaten pathways of racial isolation. Let the press trumpet forth the great story of democracy as against all class rule. Education and leadership will work as well for law and order as anarchy, for Americanism as for Bolshevism.

And, last but not least, it should be said that the great American public is tired of being made the goat or of playing the part of the innocent by-stander who gets hit with the brick. We cheerfully submitted to privations and inconveniences in order to win the war. But we have had more than enough of this sort of thing handed us as a result of the rows between different groups of our own citizens When the railroad workers threaten to leave us without means of transportation, we must find a way to explain to them that a part is never greater than the whole, and that the railroads are a public service worked by public servants and not by all-powerful autocrats whose whim or wish is our law.

When the coal miners shut off our supply of coal at the beginning of winter, and our homes, industries, schools and churches are affected, while starvation and sickness stalk abroad, we would exhibit the soul qualities of sheep if we did not stand up and fight for the rights of all against the rights of a class.

We are sick of this civil war business carried on at our expense and without our consent. It may not be that the voice of the people is the voice of God, but it is true that in America the decision of the whole people on any vital issue is always a just decision. Then let us have these industrial disputes before the high tribunal of public opinion, and let us pass final judgment under the forms of law and order, rather than permit individuals and groups to lapse with anarchy while we pay the bills.

WILLIAMS IN NEW POSITION

Former Reading Iron Company Official Now Aid to Head of Pittsburgh Gage & Supply Company.

W. Woodward Williams, vice-president and general manager of the Reading Iron Company, Reading, Pa., who recently resigned from that concern, became assistant to the president of the Pittsburgh Gage &

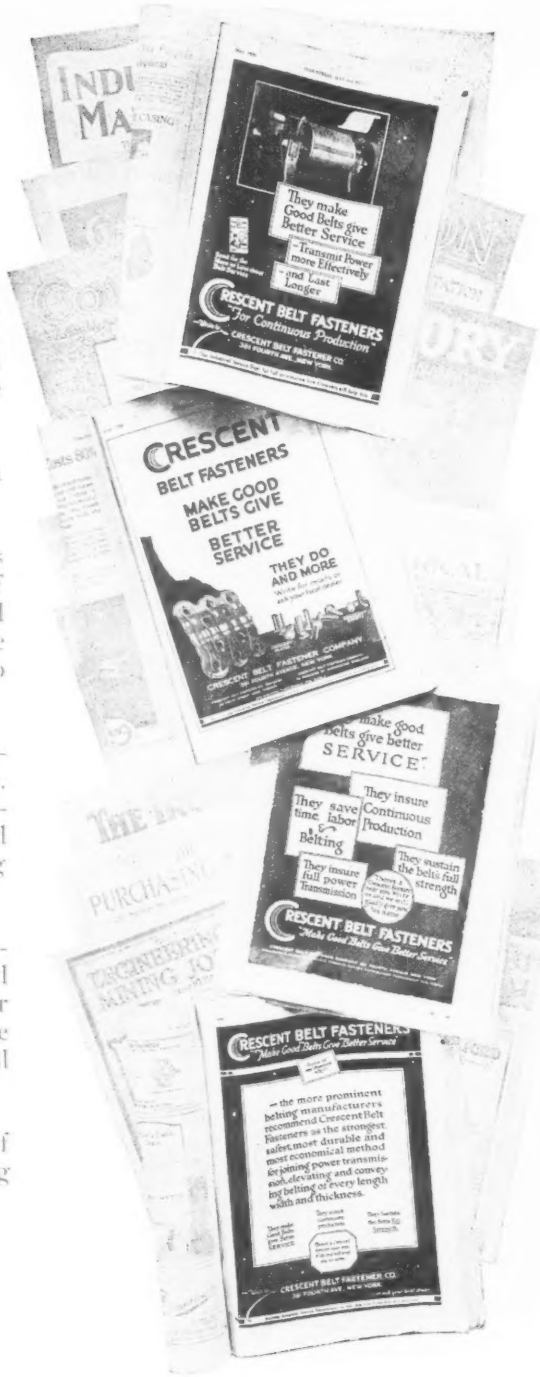
W. WOODWARD WILLIAMS

Supply Company, Pittsburgh, on September 1. It is understood that Mr. Williams has acquired a substantial stock interest in the Pittsburgh Gage & Supply Company, large jobbers of mill, mine and railway supplies, and manufacturers of well known electric washing machines, ironing machines and vacuum cleaners.

Mr. Williams is very well known among manufacturers of iron and steel products throughout the country. After graduating from Harvard in the class of 1905, he spent six years in the mills of the Carnegie Steel Company, in Pittsburgh, Duquesne and Youngstown. His first selling experience was with the Bourne-Fuller Company of Cleveland, and he was later appointed manager of the Pittsburgh office of that company. In January, 1914, he became general sales manager of the A. M. Byers Company, Pittsburgh, and later general manager of the same company. After leaving the Byers Company, he was appointed general manager of the Reading Iron Company, and was later elected vice-president of the same concern, in charge of sales and operations.

In securing an interest in the Pittsburgh Gage & Supply Company, Mr. Williams will give that organization the benefit of a wide and successful business experience and an extensive acquaintance among manufacturers and users of iron, steel and tubular products throughout the country.

Business Push Means Bigger Profits



For the dealer who concentrates on Crescent Belt Fasteners there are mighty profitable results. For Crescent advertising is sowing a fertile field and the dealer who follows through will reap the results.

If you are this kind of a dealer, we've got a message of importance for you.

Crescent advertising is packing a real "sales punch" to the users of belting in every branch of industry the world over. Sixty-seven technical and trade papers are hammering the sales story home month in and month out directly to the men who have the "Say."

The dominating poster style of Crescent advertising rivets the reader's attention at first glance. Its terse, short statements hit the eye. Its dominating poster style makes Crescent advertising stand out from everything else like a sales Giant among dwarfs.

This consistent, persistent, insistent advertising drive means business for you if you get behind it. Tie up with what we are doing. Have your salesmen mention Crescents regularly and all the time, and especially to recommend, specify and sell them with every roll and cut of belting you sell.

Write to our Dealers Service Department if you want to arm your sales force with selling ammunition.

Crescent Belt Fastener Co.
381 Fourth Avenue, New York

Canadian Branch: 32 Front St., West, Toronto, Canada.

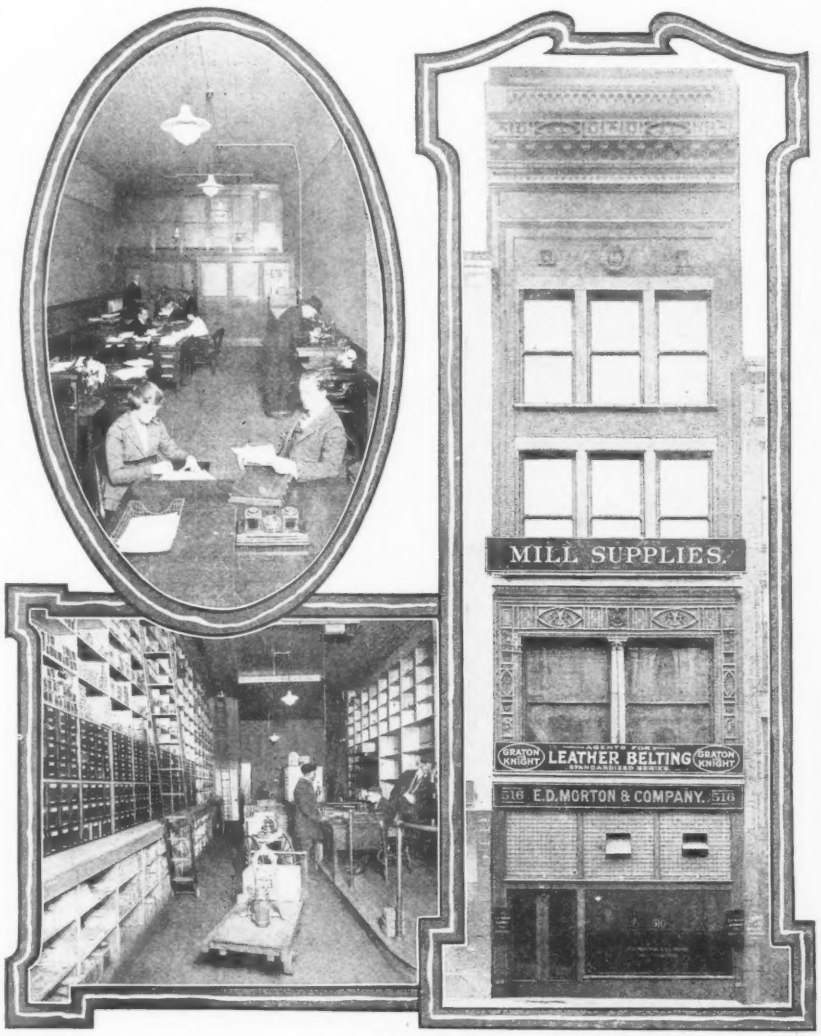
CRESCENT BELT FASTENERS
"Make Good Belts Give Better Service"

Vacant Chairs Brought This Man Prosperity

E. D. Morton, Louisville, Ky., Went Out After Business and Built Up a Thriving Concern—Quality and Service Aided Growth

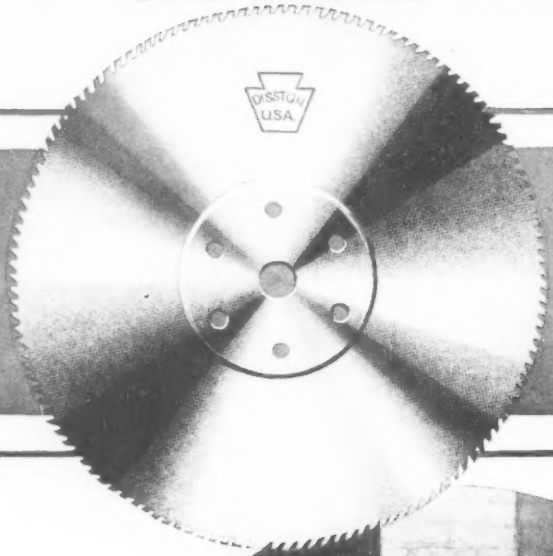
In 1907 E. D. Morton decided to go into business for himself. As is customary with Mr. Morton, his decision was quickly followed by action with the result that he was soon installed in a small office in the Board of Trade building, in Louisville, Kentucky. Having had considerable experience in selling iron and steel products, hardware and similar lines, he was well fitted for the mill supply business. He was possessed of a good physique, had plenty of energy and ambition, and was not afraid of work. These qualifications, together with his desk and two chairs, constituted his total assets. Mr. Morton now confesses that one of the principal reasons for his success is that he kept both of those chairs vacant most of the time. Anyone looking for "Ed" Morton would invariably find that he was on the job, working the trade, and not at his office seated in one of his chairs with his feet on the other.

The business was fairly successful from the start. It was not long before a "stock" of packings and similar goods was put in. Nothing further need be said in regard to this "stock" than that it was kept in his office. Business seemed to come to Mr. Morton, but anyone who has ever started a supply business knows that business comes to no one. It must be gone after. Mr. Morton went after the business and soon it was necessary for him to take two offices, then an entire floor in a public warehouse. As the stock increased, two floors were needed, and in 1911, E. D. Morton & Company moved into the building they now occupy at 516 West Main street. This building has four floors and a basement, and, at the time the company took possession, it provided plenty of space for the stock carried. Now, however, the company has two buildings, each with four floors and basement, and it carries a large stock of mill supplies, hose, belting, packing, machinery and garage equipment. The company prides itself on the service it gives, and, to maintain its reputation, it keeps seven automobiles constantly on the go, delivering machinery and supplies. A service and engineering department has been installed which gives information pertaining to equipment for factories and shops, the best method of installing machinery of all kinds, and how to secure the best results from it.



Views showing the front of E. D. Morton & Company's building, a portion of the office and one of the stock rooms

The history of E. D. Morton & Company is a striking example of what can be accomplished by selling quality goods and combining good service with courteous treatment. Mr. Morton says this always has and always will be the policy of his house, and he attributes to that policy, his success in business. The company is always glad to hear from manufacturers who desire representation in Kentucky and is always ready for their representatives to call.

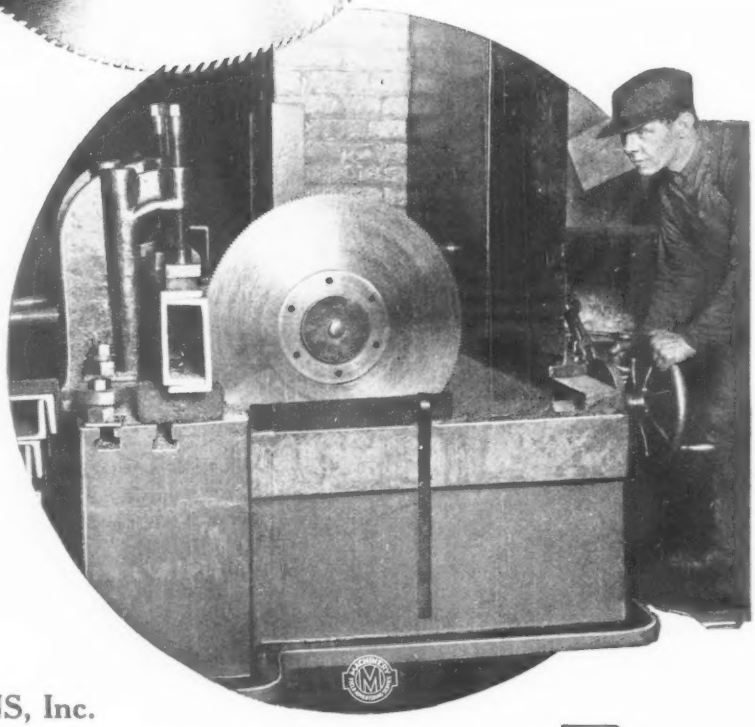


This Concern Has Used Disston Saws for Twenty Years

The Superintendent of the Service Department of the Otis Elevator Company of New York is very well pleased with the Disston Saws that they are using. There are several of them, cutting ship channels, I-beams, and bar stock. The saw shown has been about 12 years in constant service. It is a 30" diameter saw, used for cutting sections of ship channels made out of structural steel.

Two of these pieces 18"x3"x½", are cut through at once and it takes 3½ minutes to complete the cut.

Disston Saws will give you equally good service. Let us tell you more about them.



HENRY DISSTON & SONS, Inc.
Philadelphia, U. S. A.

Chicago, New Orleans, Seattle, Sydney, Australia, New York City, Boston, Memphis, Cincinnati, Bangor, San Francisco, Portland, Ore., Vancouver, B. C.

Canadian Works: Toronto, Canada

TRADE MARK
REG. U. S. PAT. OFF.

DISSTON
METAL CUTTING SAWS

Successful Salesmanship

By Frank Farrington

All Rights Reserved

The Sales Convention

The business man who thinks he is sufficient unto himself may be a pretty good man in his line. He may get ahead and make and save money. But if he is successful to any degree, it will be in spite of his self-sufficiency and not on account of it.

Any man who thinks no one else can give him any suggestions about how to make more sales must have the idea that he knows all there is to be known about his line of work.

It is a safe bet that you, as a salesman, can learn something about selling from every other salesman you meet if you will give him a chance to talk and if you will try to find out what his ideas are on the questions you have considered. Every other salesman has had some experiences that differ from your own and, even though he may be rather stupid, he has learned some things you have not learned. They may be unimportant or they may be valuable. At all events, you would benefit by knowing about them.

A part of the value of a convention of the salesman of your house lies in the fact that it gives you a chance to visit with your fellow workers and learn about their methods. Aside from what may be learned in the meetings or sessions of the convention, the event is worth while for you because of what you can learn in private conversations. If, however, you are going to learn something about salesmanship in your talks with the other men while hobnobbing at luncheon or at other odd moments, you must talk to them about selling, not about the standing of the clubs in the big leagues or about the show you all saw the night before.

To a good many salesmen, a convention is a joy ride. They like to take a week off at the expense of the house and sit around the factory and convention hall, smoke many cigars, eat good meals, see a few good shows and joke with the stenographers and girl workers. They enjoy the pleasant features of a lounging room which has been all decked out with rented palms for the occasion, and they get some inspiration from the high-priced imported speaker who pats them on the back and points out to them the opportunities of salesmanship.

But as for digging into a convention and getting the most possible good out of it, these fellows don't see it that way. They don't go to the convention to work, but to have a good time. To be sure, they applaud when the sales manager makes his keynote speech, and they stand up and clap their hands for five minutes when the president appears on the platform. They take part in all the demonstrations and flag wavings, but they contribute nothing themselves to the profitable side of the event, and they go away with recollections of fun rather than with a head filled full of new ideas.

Some salesmen don't like conventions. Perhaps their experiences have been with conventions which were too instructive for them. They wanted a good time and they got nothing but selling helps. They counted on a week's vacation, and they found they were in for a week of schooling. Such a salesman gets so he is not very keen for conventions. He even kicks about having to attend them. He says, "What did a convention ever do for me?" A convention never does anything for such a fellow. The only way it could do anything would be for a committee to take him and beat information into him with a club. He is not there to learn. He does not want to learn. He wants to have a good time. The last thing he thinks of is helping to make the convention a success by contributing something besides complaints. When he goes back into his territory empty handed, so far as the convention is concerned, claiming the event has done nothing for him, he should ask himself, "What did I do for the convention?," not "What did the convention do for me?" The salesman who goes into a convention determined to help it along and to contribute anything he can in the way of constructive selling helps is the salesman who will get the most benefit from it.

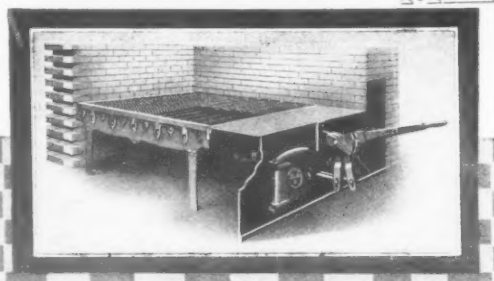
A lot of salesmen think that when they have struck a complaint into the question box the first day, they have done their part toward making the occasion a success. They are ready to put up a kick about anything, big or little, that has gone wrong, but they never think of making suggestions as to how troubles may be avoided.

I know of a convention of salesmen which opened with so large a proportion of sore-heads in attendance that it was necessary to prolong a four days' meeting into a week and then hold the men over Sunday into the second week before these disgruntled salesmen could be brought to see the wisdom of the management in making certain changes in prices and terms. And I have seen a convention comprised of so large a percentage of wise, far-seeing men, that it was able to carry its program through without a hitch, and finish up a day ahead of schedule.

Perhaps the trouble with conventions, so far as the kickers and knockers are concerned, is that those men are thinking too much of themselves. They are unwilling to take hold and help make the convention a business success. They do not want to tell any of their own good selling methods because they want to maintain any advantage they possess over the rest.

The salesman who thinks of the convention as a place where he is going to be mulcted of his pet, private selling plans, forgets that any information he gives out, even if as valuable as he considers it, is only one man's ideas, while he himself will be able to absorb the ideas of a score or a hundred other men in exchange. The convention gives him the chance to exchange one man's knowledge for that of many men, with the chance that some of those other men know more than he does about the very ideas he prides himself upon having evolved.

A salesmen's convention is not an occasion when the sales manager brings all the men in from the road and



AJAX GRATES

15% LESS COAL

Means many dollars saved every day of the year – and the AJAX will do better than this in most cases.
Our claims are based on results given in actual service over a long period of years-

Ajax will save coal- - Save labor- - Cut upkeep- and increase steam.

Our Booklet "The Economical Burning of Coal" will be mailed, without obligation, on request.

VALLEY IRON WORKS
WILLIAMSPORT, PA.
ESTABLISHED 1865

"VALLEIRON" V

A Positive Necessity

Write for FREE sample, catalog and prices

In every manufacturing plant where light is used, the LOXON Lamp Guard is a positive necessity.

Prevents Loss by Theft and Breakage

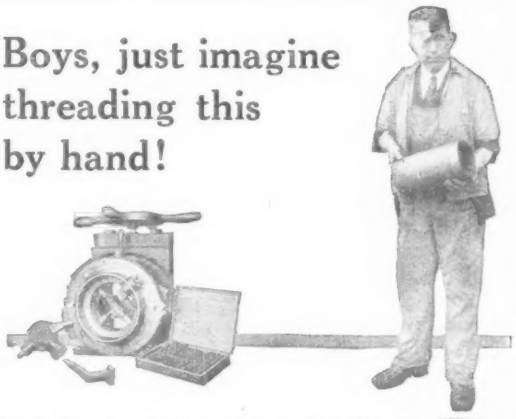
The renewal of lamp globes as the result of breakage and theft is a serious item in factories where lamps are unprotected. The LOXON performs the double service of protecting globes from carelessness and from theft. Made for Mazda as well as carbon lamps.

Profitable Line for Dealers

The LOXON line offers dealers an opportunity for quick profits. One lamp saved pays for a LOXON and users are quick to see the economy of equipping with LOXON throughout.

McGill Mfg. Co., 53 Elm Street, Valparaiso, Ind.
Largest Manufacturer of Wire Lamp Guards in the World

Boys, just imagine threading this by hand!



Yet that's what I did on this Forbes' Pipe Threading and Cutting Machine. I was curious to see how it would work, so I put this piece of 6-inch pipe in the vise at the back, set the dies, and fixed the ratchet on the crank shaft. It didn't take any time at all, and this thread is just as clean as a whistle. Yes, sir, I sure do like the FORBES'!

The Forbes' Pipe Threading and Cutting Machine will fit your requirements. Made in all sizes, for hand, belt, or motor drives, and equipped with cast iron base if desired.

CURTIS & CURTIS CO.
354 Garden St. Bridgeport, Conn.

FORBES'
IT THREADS PIPE ACCURATELY

9932-K

proceeds to urge them to work harder so as to make more money for the house, while thinking nothing about the interests of the salesmen themselves. There are salesmen who habitually resent any apparent attempt to speed them up, to stimulate them to greater effort, to inspire them with renewed energy. They think they are working hard enough as it is. They think, "Why should I tear my shirt off rushing around to make more money for a bunch of easy living officers and stockholders who don't know what it is to get out on the road and sell goods?"

It is hard to find among the men higher up in any successful business house any who conform to the above description. Most of them have learned the business on the road or in the factory, and those who have not have usually come in from other concerns where they have had the necessary training. The instances where the heads of a live organization are "easy living" or even easy going, are few. The officers of a concern are not the ones who can loaf on the job. An occasional salesman may do so, but a man in an important official position cannot do it without the results being apparent in ways that affect the whole organization.

If you are brought into a convention and stimulated into doing more and better work on the road, you will profit as soon as anyone. You will get more money for your services. The house will become more sound financially, making your job more secure and enabling the company to give you a better line of products, thereby making selling easier. The first man to profit by successful salesmanship is the successful salesman. He has to be paid for his work first and if he is not paid according to his worth, the sales manager knows he cannot be held.

In every convention of the selling force, even in the least successful of such events, there are plenty of good ideas brought up, ideas worth noting and carrying back into the territory. A convention may prove in a general way to be a failure. It may hit no high notes. It may have no keynote speeches, no really inspiring addresses; and yet there will be in that convention opportunities for anyone attending to pocket ideas of value that will well repay him for being there.

Just one good idea, an idea that will make it possible to land a single new prospect, may be worth a week of time and a good deal of money. That one prospect may be a big buyer, or may develop into a big buyer whose trade in years to come will be worth thousands of dollars. You never know when or where you are going to uncover a valuable selling idea. Your ears and your eyes should be open at the convention and there should be a pencil and a note book in your pocket within reach at all times.

Don't try to carry in your head all the valuable ideas you hear offered. You may think you have them so well digested that you will never forget them, but you are mistaken. Some of them will get away. Set all the valuable information down on paper as the sessions and the personal conversations go by, and when you are through, you will have a book of ideas that you can take up, one by one, as you get your opportunities.

There will be suggestions from headquarters that at the time will not seem practical. You will think, "That man don't know what it is like out in my territory. His ideas are all right, but they won't work out with my trade." Well, write down those suggestions just the same and think them over later, and try to see how they can be applied to your trade instead of trying to see in how many respects they will not fit. You will get something out of them in that way. There are always some men who take the contrary side just from habit. Their first inclination is to say, "It can't be done," and then to try to prove they are right. They should be trying to see how it can be done and if they do they will usually find there is something in the suggestions.

A sales convention for you is what you make it, not what the sales manager makes it. He can supply the program, but he cannot make the occasion a success for you or make it productive for you. That is all up to you. You can get as much out of it as you will, and the more you put into it, the more you will be able to take out. A salesmen's meeting is full of opportunities for learning, but nobody is going to cram the knowledge into your mind against your will.

KEEPS CARD STOCK RECORD

W. J. Baird Machinery Co., Detroit, Has Daily Check of Goods on Hand by Means of New System

The W. J. Baird Machinery Co., Detroit, Mich., distributors of machine tools, woodworking machinery, contractors' equipment and factory supplies, has worked out a card index system whereby an accurate check is kept of the stock on hand.

In the office of the company, there is a card for each size and kind of article in stock. When an invoice is received, the fact is noted on the card, and when the goods arrive, another notation is made. As a sale is made and the charge ticket is received in the office, the sale is recorded on the card. Each day, the amount of each kind and size of goods still on hand is noted on the cards.

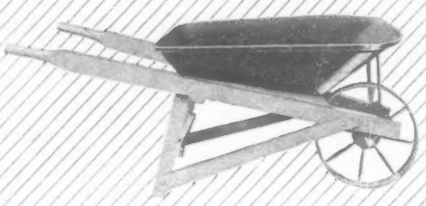
"We have had this system in vogue for a year and it has now reached the point where it is working out very successfully," said an official of the company recently. "By means of this card index record, we can easily learn just how our stock stands at all times.

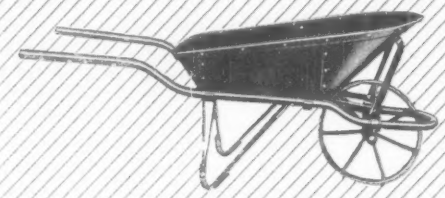
"If someone wants to know the amount of every kind of goods we have in stock, we have little trouble in getting that information for him. If we had to go over our stock completely, it would take ten men a week to do the job, but, as it is, I can take two people, go through our cards and give the inquirer accurate information in a day. Of course, we always take a complete inventory of our stock at certain intervals of time, but our card system is really more accurate because it is absolutely up to date, whereas a regular inventory would not include goods received after certain articles had been checked."

Consolidate Two Concerns

A Cleveland syndicate has purchased and consolidated the Carroll Foundry & Machine Co., Bucyrus, Ohio, and the Lambert Machine & Engine Co., Cleveland. The business offices will be consolidated in Bucyrus, and the production of machine tools and gray iron castings will be increased. R. B. Washburn, treasurer of the Klipfel-Washburn-Berkley Co., Cleveland; W. R. Hopkins of the Belt & Terminal Realty Co., Cleveland, and president of the Columbia Axle Co., of the same city, and C. F. Michael, who has been president of the Carroll Foundry & Machine Co., will be among the directors of the new organization, while David Lambert, who formerly held the controlling interest in the Lambert Machine & Engine Co., will also be identified with the new concern.

AKRON BARROWS





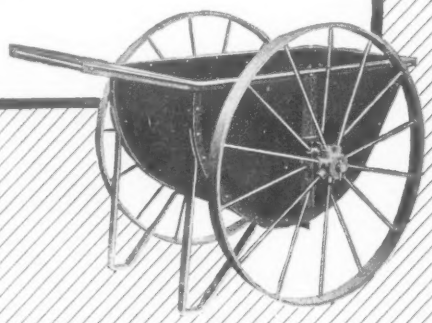
A Big, Profitable Line

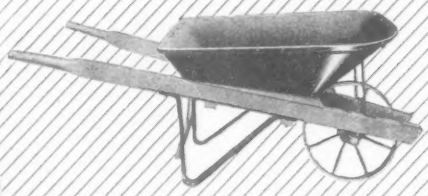
THE overwhelming preference for *Akron Barrows*, among leading jobbers is easily explained. First, the line is complete. There is a barrow for every use. No makeshift about them. Every detail in their construction is the result of years of barrow building experience. Hence, a greater demand for *Akron Barrows* than for any similar make.

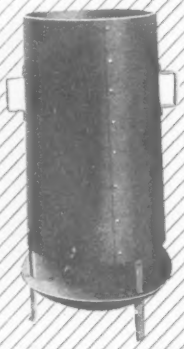
Second, our exclusive distribution arrangement, backed by a liberal margin of profit for the jobber, has few if any equals. With *Akron Barrows*, your business volume is unlimited. Ample manufacturing facilities insure reasonable delivery. Perhaps your territory is open. Write now.

Send For Descriptive Literature

THE AKRON CULTIVATOR & MANUFACTURING CO.
AKRON, OHIO, U. S. A.







Profit Sharing Plan Aids Employes' Spirit

A Living Wage for Every Man Is the First Aim of Louisville Varnish Company—Bonus Distribution Unique in Many Ways

A. W. WILLIAMS

During the past few years there has been considerable discussion in business circles of the profit sharing plan of the Louisville Varnish Company. It is frequently referred to as a bonus system, but the company refers to it as "Distributive justice, under a profit sharing plan."

There are many profit sharing plans, but few, if any of them, are more practical than that of the Louisville Varnish Company. It is interesting to know that this company had no labor trouble during the war period. Its men stuck closely and there were always others waiting for a chance to get on the pay roll. The entire force, from the day laborers to the president, worked as a unit to produce the largest possible amount of goods.

The general plan of the Louisville company's profit sharing system is clearly outlined in a pamphlet published by the company, under the caption, "Distributive Justice, a Profit Sharing Plan," from an address by P. H. Callahan, president of the company, before the

P. H. CALLAHAN

faculty and students of the School of Sociology of Fordham University, New York, two years ago. National conditions have changed somewhat since that time, but the general plan has not changed. Col. Callahan's address was in part as follows:

"The plan of our company is known in some places as the Ryan-Callahan plan, as it corresponds to the fundamentals so clearly drawn out by Dr. John A. Ryan, professor of economics at the Catholic University of America, in his well known books, 'A Living Wage' and 'Distributive Justice.' The living wage, when Dr. Ryan wrote his book, was something like $600 a year. That is to say, $600 was the minimum upon which the average sized family could decently live, and that presupposed normal good health, free education and all that, including no medical or funeral expenses, which all agree should be covered so that workingmen and members of their families will not have to depend on charity in such emergencies.

"Moreover, in large cities, much more than $600 was required, as much as $950 being necessary to live decently in New York. That was back in 1906, when all the necessities of life were rather cheap.

"Now the Ryan-Callahan plan starts with a living wage. Rather, it presupposes the payment of such a wage before it starts. In our company, beginning in 1912 with Dr. Ryan's standard as applied in the circumstances of our employes, and watchfully enlarging it to meet the advance in the cost of living in the years since—in lean years as well as in fat ones—we have retained all our employes and paid them a certain living wage, neither letting down wages nor letting out men to meet a falling off in sales.

"In addition to these rules that look both to security of employment and a decent livelihood, we distribute the annual profits among the employes as well as among the owners, and we do that on a fifty-fifty basis. When the books are closed at the end of the year, every person who works for the company, from the president in the office to the wrapper boy in the factory, has been given a wage commensurate with the character of his work, with a becoming living as the minimum, which has been paid each week or month during the year.

"Then we pay a living wage to the actual capital invested, which is simply the market price of money or the usual rate of interest, and that gives us a starting point of equality between labor and capital. From here on, we split half and half. The employes and owners having each received a return necessary to support them in the part they play, we are ready to divide the remainder, which we do share and share alike, one-half going to the capital and the other half going to the labor that has been employed.

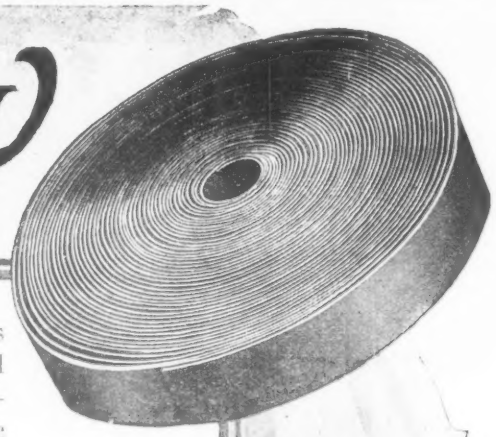
"The half that goes to capital is divided among the owners in proportion, of course, to the money they have put in. The half that goes to labor is divided among the employes in proportion to their respective wages during the year, so that one who gets sixty dollars per week in wages receives twice as much from the profits at the end of the year as the one who receives thirty dollars a week.

"This system has proved of the greatest satisfaction to everybody concerned. Every man has an interest, an individual, personal interest, in everything going on. He has shared fifty per cent of every decline in profits, and he has not had to be told that his shortcomings have helped to cut profits down, thereby putting him out of pocket in a very definite way. And then he has suffered loss through any shortcomings of his fellow workmen, and all along the line the employes have a common interest and a common responsibility in getting the very best out of one another, which is a type of supervision that we have found to be much more effective in the end that the old-fashioned 'boss.'"

The company has at all times played a fair, square game with its employes. Wages paid all classes of labor represent top wages paid to the same class of labor in the varnish industry as well as in similar indus-

Ladew

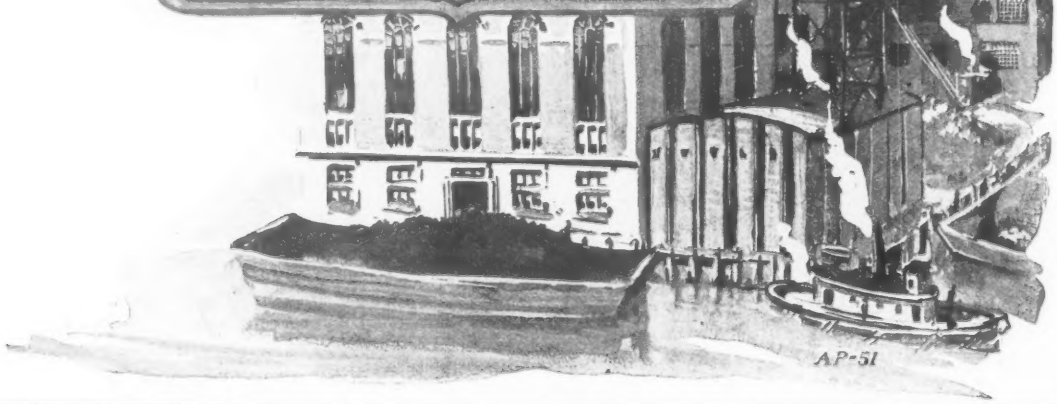
Since 1835



No economic law is more firmly established than this:—when dealing with responsible manufacturers, the more you are asked to pay, the more the value offered you. Buying belting, you'll get just as much power transmission economy as you're willing to pay for. The price asked ought to be the least influential factor, except as you are able to weight it with the service-rendering capacity it covers. Since 1835, belting prices have varied within wide limits. But in all those 85 years, every Ladew Leather Belt has been worth its price. And those who paid that price secured a degree of service which made their Ladew Belts extremely inexpensive.

EDW. R. LADEW CO., INC.
NEW YORK, N.Y., U.S.A.
Since 1835
Branches and Distributers, with Complete Stocks, in All Principal Cities

Branches and distributors in all principal cities of the world carry complete stocks.



tries. The common laborer is drawing as high a wage as he would be able to get anywhere, and he is working about the easiest hours. The salesmen are drawing as good wages as they could hope to receive elsewhere, and if they show big increases in sales, their salaries are increased to cover the increased volume of business on a pro rata basis before there is any discussion of profit division.

During the war period, as the cost of living increased, the company voluntarily increased wages when it felt that increased living costs had mounted sufficiently high to demand an increase in wages. At one time during the war, the company announced a general increase of twenty per cent in wages all along the line. This increase naturally reduced the bonus for the year, but it gave the employes the same general living wage they had been accustomed to, and prevented any man from feeling that he could draw a higher wage somewhere else. All men are on a salary basis, with salaries of salesmen adjusted on the basis of merchandise sold. If the salesman increases his sales, it means larger profits and a larger division of profits for all, but the salesman who shows the increase is first allowed extra compensation for his efforts.

Capital must naturally get a dividend on investment before there is any division of profits, as money used in business must pay interest, whether it be to stockholders or to bankers. Salaries paid to officers are not grossly inflated as in many industrial concerns which operate profit sharing plans that leave slim picking for minority stockholders.

There is a human interest element found in the Louisville Varnish Company's organization that is not found in many organizations. The officers take personal interest in the men, and know what they are doing, how they are getting along at home, and try to make life a little happier for them. Once a year, the company gives a big picnic for its employes, chartering a boat for an all day outing. Every man and woman on the payroll is allowed a goodly sum to pay for his or her picnic basket, while the company furnishes ices, hot drinks, etc.

At the annual meeting of employes, held at a down town hotel, a banquet is given for all. Following the dinner, Mr. Callahan and other officers tell of what has been accomplished during the year, why profits were good, or why they didn't come up to expectations, and the employes are informed as to how much they will receive as a bonus on the year's salary. In 1916, which was a banner year, all employes received fifty-eight per cent of the year's wage as a bonus.

Order Cancellation an Evil

Practice Has Become Widespread and is Injurious to Business

ELTON J. BUCKLEY

My observation is that for the last two or three years there has been a perfect saturnalia of order cancellation in all lines of business. The demand greatly exceeded the supply, and cancellations were done by the seller for the most part, sometimes because he could sell his goods in a better market. For the last several months the buyer has been doing most of the cancelling because the bottom has dropped out of the markets, and the buyer has preferred to unload the burden on the seller.

Undoubtedly, it is convenient and economical for the party who benefits by it to cancel an order that has gone against him, but it certainly does not make for good business. It would in my judgment be a good thing in the long run for everybody if all order blanks bore the words, "Not subject to cancellation."

I am constantly receiving letters on the law of cancelling orders. The following letter comes from an Ohio concern:

"We wired the X Co. to cancel our order for bottles and return our trade acceptance, as we had thought we would be unable to handle the proposition, and wanted to drop it.

"In answer to our wire, the company wrote us that the goods had been shipped and it was too late to accept our cancellation.

"The date of this letter was April 16th, and with embargoes in effect at almost all points at that time, we knew the goods had never been shipped, and even at this date we have never received nor heard any more about the goods being shipped.

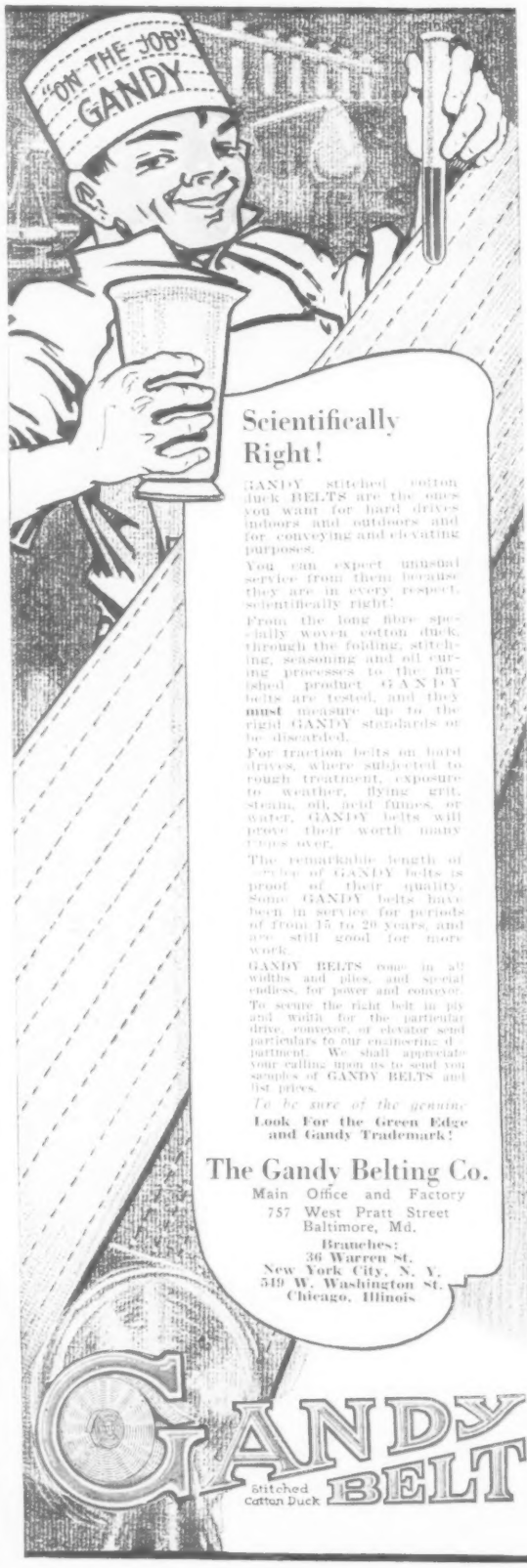
"The company has made several attempts to get the money for the trade acceptance but we did not think that we should pay them, especially since we have never received the bottles.

"Will you kindly give us the dealer's rights in this matter and tell us whether or not the dealer can be forced to pay for the acceptances?"

This custom of allowing free cancellation of orders has grown up in most lines of trade, but it seldom goes so far as to allow cancellation after the order has been paid for by giving a promissory note in payment, for that is practically what a trade acceptance is. In some cases, however, it even goes that far, the only real condition being that the goods must have been shipped. If they have been shipped, the order cannot be cancelled.

In the case submitted the question is one of fact: were the goods shipped prior to cancellation? If yes, the order is not subject to cancellation; if no, it is. But a trade acceptance having been given, a new question is introduced: Has the acceptance been indorsed over to somebody else? If it has, that somebody else can collect it, and this correspondent might then just as well take the goods, for he will have to pay for them anyway. But if the acceptance still remains in the hands of the seller of the goods, and the goods have not been shipped, the buyer can legally cancel and demand the return of his acceptance.

A wholesale cotton dealer told me of a recent case which shows how completely all rule disappears when one has made a deal which goes wrong. His firm sold an order to a Pennsylvania buyer at the then market price. While the goods were en route, the market dropped and after the buyer had them in his possession he wrote, "Unless you reduce the price on these goods we won't keep them." In this case there was not the slightest moral or legal obligation to reduce the price because the goods had been shipped and delivered, but a concession was nevertheless made to please the buyer.



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You can expect unusual service from them because they are in every respect, scientifically right!

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The remarkable length of service of GANDY belts is proof of their quality. Some GANDY belts have been in service for periods of from 15 to 20 years, and are still good for more work.

GANDY BELTS come in all widths and plies, and special endless, for power and conveyor.

To secure the right belt in ply and width for the particular drive, conveyor, or elevator send particulars to our engineering department. We shall appreciate your calling upon us to send you samples of GANDY BELTS and list prices.

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YOU LOSE

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In busy times we hold ourselves responsible to you for the delivery, within a reasonable time, of any order in our line placed with us and for this reason have consistently refused all work of special character which might interfere with the execution of our regular Dealers' orders, regardless of the possible profit involved. In plain words the manufacture of tools is

NOT A SIDE LINE

with us to be used as a "meal ticket" when other work is slack but is our regular and exclusive business.

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Code Calling System Proves Big Time Saver

Man Locater Avoids Numerous Delays and Promotes Plant Efficiency—May Be Used to Call Men or Sound Various Signals

O. P. GELLERT

Never has man power—whether of the hand or brain variety—cost as much as it does today. Never has it produced so little in proportion to its cost. Never has it been so important to eliminate every wasted minute—to make every man's time fully productive. No organization can afford to have its members waste their time in searching for each other. A system which promptly finds the men who are wanted pays for its cost in a short time. It saves time and trouble for everyone. The advantages, operation and many useful application of a code calling system are briefly told in this article.

Take, for instance, a busy factory. A salesman calls up on the long distance phone to find out whether or not a certain special article can be made at such and such a price. He has been asked for the figures at a meeting of his prospect's executives. The manager calls for Jones, the production man—the only one who can answer the question. Jones is "out in the plant somewhere." What happens? The switchboard operator calls up department after department. She holds the wire each time until someone looks for Jones and comes back with the answer "Not here." Messengers race through yards, corridors and other places where phones are not connected, asking everyone they meet, "Have you seen Mr. Jones?", "Where did he go?" "How long ago was he here?," etc. After a fifteen minute search, if the messengers and the switchboard operator are lucky and if the plant is not too large, Jones is finally discovered.

In the meantime, the manager sits idle, holding the wire perhaps. The salesman waits and his prospects wait. The telephone operator has stopped answering incoming and outgoing calls. Executives who want to call one another must also wait until she is ready to attend to the switchboard again. A dozen or more men have had to stop their work to speak to messengers or to answer telephone calls. The time wasted by these men, by the manager who is waiting for Jones, by the switchboard operator, by messengers and by executives who could not use the tied up switchboard, has cost the firm a good sum.

But this is not all. The general relaxation of productive effort because of this frantic search, the delaying of incoming calls of possible customers and the enforced waiting on the part of the salesman's prospects has cost the firm even more—though the actual figures can never be determined.

Now contrast this with the way the code calling system located Jones. The manager calls up the switchboard operator and says "Locate Mr. Jones." In less than half a minute he has Jones on the phone—and not a soul has been disturbed.

Take another case. The work of an entire department is held up because of an unforeseen obstacle. The manager or the superintendent must be found at once. The locating system brings him immediately and avoids costly delays. An important machine in a factory breaks down. The locating system reduces production delays to a minimum by finding the repairman without losing a minute. A steam pipe breaks. Hot water and steam escape. Costly material nearby might be ruined. The man locator—by finding the plumber or the steamfitter instantly—can save thousands of dollars in such an emergency.

The greatest saving of time and money comes in the day in, day out use of a code calling system. A man locating system makes every important man in even the largest and most scattered plants instantly available to every other important man. It keeps all the executives, department heads and others of importance always at one another's finger tips. This cannot but add to their productiveness and to the efficiency of the entire organization.

The man-locating system consists of a code calling instrument and a number of different types of electric signals so scattered throughout a building or group of buildings that when sounded they are heard everywhere. The code calling instrument, which is usually placed within easy reach of the switchboard operator, automatically operates these signals in such a manner as to sound various code numbers which are indicated on the dial of the instrument.

Each important man is assigned a code number corresponding to a number on the dial. When a man is wanted, the switchboard operator turns the dial to his number and pulls a lever. The proper signal is sounded at once in every part of the plant to tell him he is wanted. Wherever the man is he hears the signal—goes to the nearest telephone—and is connected by the operator with the man who wants him.

The instrument may be set to sound a code signal once, twice or three times, as desired, by a single pull of the lever. The continuous repetition of a call defeats its own purpose. One soon becomes so accustomed to hearing the same call that he pays no attention to it. By limiting the repetition of signals to the necessary number and by selecting the signaling devices with care, it is not difficult to obtain a signal system which will not annoy the most sensitive person and which, at the same time, will always get prompt attention. After putting in a call, the operator can forget all about the code calling instrument. The instrument stops automatically after the desired number of signals have been sounded and needs no further attention until another call is sent.

Finding the men who are wanted—and finding them at once—is but one of the many things the code calling system can do. It has proven a great time saver in a thousand different ways in large industrial plants. Information of a simple nature may be constantly conveyed to different men and departments. For instance, by sounding a certain signal the superintendent may be told to report to the manager. Another code signal might tell him something is wrong in the power house and his presence is urgently needed there. Still another code signal might summon all the department heads to the conference room for an urgent conference with the manager. Certain departments might be told to shut down temporarily or start work again as occasion demanded, etc.

Another common use of the code calling system is

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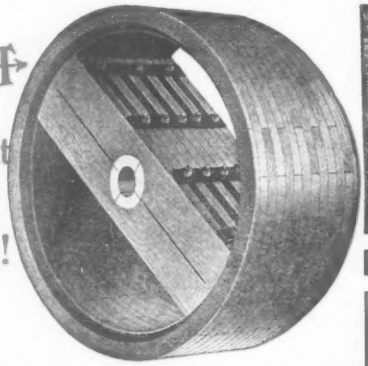

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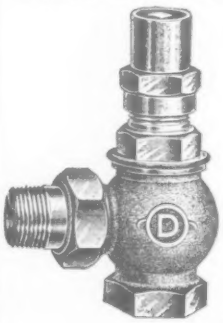

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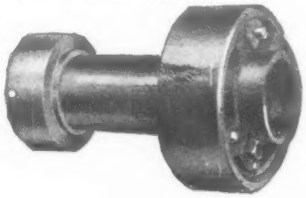
There are other features that belong exclusively to Mule-Pull Clutches, too, that mean greatly reduced power transmission costs.



DEALERS

The RIGHT IDEA is behind MULE-PULL friction clutches—you can sell them. Write for our interesting proposition.

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140 North Third St., Reading, Pa.

the sounding of signals for starting and stopping work at morning, noon and night. It has been proved time and again that where starting and stopping signals are not used the men straggle to work and often leave their places long before it is time to quit.

The code calling instrument is so arranged that a fire alarm system may also be connected with it. The fire alarm system consists of a system of signaling devices apart and distinct from the signaling devices used for code calling. In case of a fire, the switchboard operator merely pushes a button at the top of the instrument. This disconnects the code calling circuit and connects the fire alarm system. By properly setting the dial she can immediately notify the members of the fire brigade of the location of the fire, thus enabling them to put it out at the start. Another code signal, sounded by shifting the dial to another number, might be used to empty the building should that be necessary.

Important visitors may be assigned temporary code signals which will call them to the telephone should they be sought. Events of unusual interest to the members of an organization—for instance, the results of an election or the score of a ball game—may be announced to them by predetermined signals.

The instrument, which is somewhat similar to a clock in its arrangement, is "set" by a turn of the knob and is operated by a single pull of a lever. This simplicity of action is a great aid to the operator. It occupies less than a square foot of space, and is noiseless.

The instrument has a range of forty code numbers. Two distinct signal systems may be operated by it: A code signal system and a fire alarm system. A white tell-tale lamp flashes when signals are being sent so as to show the operator that the system is operating properly and that the right code signal is being sent.

When the fire alarm system is switched on a red lamp burns continuously. It is impossible for the operator to use the wrong signal system without being promptly notified. The code calling instrument can be used on low voltage or on light and power circuits. It is easily installed and its cost of operation is low. Many large houses have adopted the device.

Soldiering on the Job Holds Down Production

Tendency to Dawdle Has Caused Heavy National Loss—Manufacturing House Tries Interesting Experiment with Good Results

LESTER G. HERBERT

It is continually impressed upon us that high prices are largely the result of labor shortage and under-production. Under-production is due in part to absence of raw materials, to disturbed transportation facilities, and to labor conditions.

Labor conditions are in reality at the root of the whole evil, for if we had sufficient labor, raw materials could be raised, mined, or brought from wherever they may be; and if we had enough labor of the right kind, the problem of transportation facilities would soon be solved, for there would be enough men willing to work to take hold and perform the necessary tasks without tying up industry all along the line. So it appears that labor must readjust its mental attitude, in part at least, in order to make living conditions tolerable for itself and for others.

Those who employ a considerable amount of labor, have lately been much annoyed by the disposition of many workmen to soldier on the job. The fact that the workers are receiving big pay does not seem to present itself as a sufficient reason to them for giving value received in the way of service.

In consequence of this tendency to dawdle, there has been a heavy national loss. Expensive equipment has not been fully used, production has been slowed down, the morale of the working force has been impaired, and false standards have been built up by those who have felt that they have had the situation entirely in their own hands.

The dominating labor element has many times failed to realize that it has been killing the goose which laid the golden egg. It is impossible for a business to go on yielding dividends sufficient to provide for its own expansion and upkeep, to pay the many heavy levies in the way of government taxes, and to return larger and larger wages and to give better and better conditions to its workers, unless all are prepared to work together whole-heartedly. Capital can do its part, but it cannot do the part of labor as well. There must be intelligent team work, and as soon as one of the span begins to sag back in the traces, the load does not roll along smoothly. "A house divided against itself cannot stand," and, conversely, a house united within and built solidly upon a foundation of common interest, can and will stand long.

So it becomes evident that when workmen or employes of any kind really soldier on the job and six, seven, or perhaps eight men are really required to do the work of five, labor shortage is increased and production is slowed down. Naturally, prices soar, and those who have caused the pinch are often the first ones to bewail loudly the injustice of the situation.

An interesting experiment is reported to have been made in a certain large manufacturing plant. The executive officers found themselves facing a critical situation—one for which there was no precedent. The expense of operating and the cost of overhead were far in excess of the results attained. The men were drawing big pay, and the majority of them were putting in their time in a more or less leisurely manner and with the attitude that they were indispensable and could do about as they pleased.

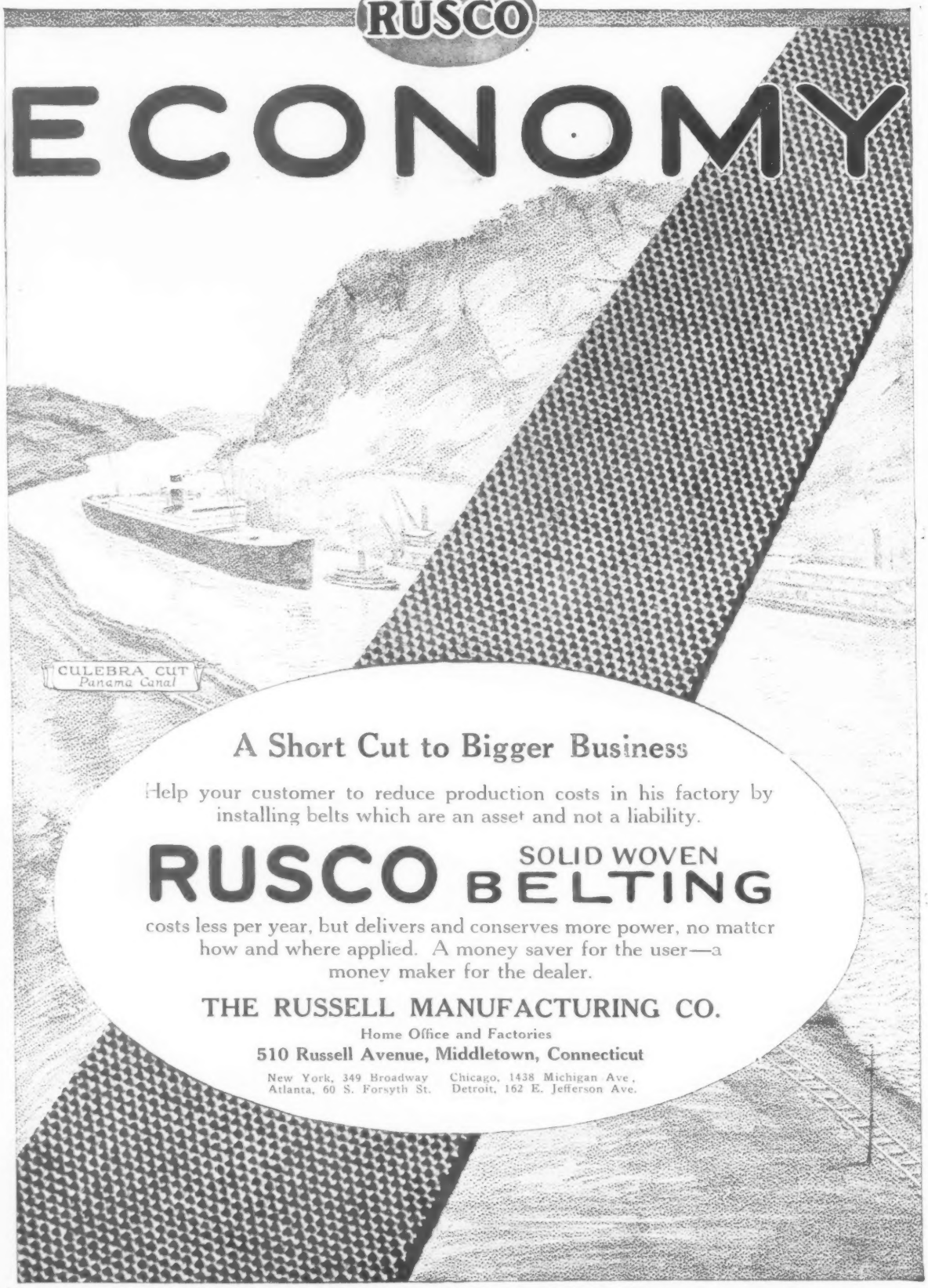
The executive officers felt that the time had come when there must be a lesson given if the concern were to live. It was decided to go through the entire plant and make a careful study, with tabulated results, of the productivity of the 6,000 employes, and to select from these records 1,000 scattered workers who were the least desirable to retain. Some fear was expressed in the private conferences on the part of the management that the other 5,000 would walk out, but the sturdiest spirit of the organization said:

"Gentlemen, we might as well face conditions as they are. We can't keep afloat long at this rate, and unless something is done, we will all walk out—and, moreover, we will not be in a position to walk back.

"It is my firm conviction that the 5,000 men who are

RUSCO

ECONOMY



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retained, will not be so foolish as to quit their places. We must throw a stiff scare into them. We will not discharge the 1,000 men on the grounds of inefficiency, but we will phrase it rather as a forced layoff of the least necessary workers, and that, too, of a possible temporary character, but necessitated by present industrial conditions and shortage of raw material."

After some deliberation, this course was decided upon with more or less fear and trembling. The 1,000 men were cleverly selected, and perfectly good reasons were given why they were the ones in each department who could best be spared.

The 5,000 workers who were retained breathed much more freely when they found that they had a respite, for few of them had saved much from the large wages which they had earned, and they knew that the high price of living would stalk closely at their heels if they stopped work. As a result of the oft-repeated suggestion that earnestness of purpose among the workers and good use of the time at their disposal might postpone further layoffs, the workmen suddenly came to and bent to their tasks with a new will. As a result of this change of mental attitude, the output of the 5,000 employes during the first week was much larger than the output of previous weeks, when 6,000 had soldiered on the job.

There is no doubt that this is the type of earnestness of purpose which must possess our workers all along the line. They must get the new vision of measuring up to their own best, of beating their own records, of climbing by merit, rather than by push or pull; of that true patriotism which calls for every loyal American to do his full part in these strenuous times.

When the orgy of short hours and little work passes and we get down to the brass tacks of the commonplace application of everyday principles, there will be plenty of supplies to go around and plenty of people to produce these supplies. But every man will have to do his own work. He will have to stop soldiering on the job, and he will not be able to call four, six, seven, or eight hours a full day's work. It will be a case of learning to put results, necessity, and desirability ahead of any arbitrary, fixed routine.

What would we think of a mother who refused to get up at night to take care of her sick child because she had decided on a certain period of daytime service? Would we not think her either inhuman or a fit subject for an insane asylum?

Just now many of our workers are feeling that the less they can do, the better off they are, but the time will come, and that, too, in the none too distant future, when those who now see as through a glass darkly will learn that true happiness is found in worthy achievement and in the increase of personal efficiency, rather than in the dominating influence of a five o'clock whistle or a six o'clock closing time.

NEVER BORROWED A DOLLAR

Proprietor of H. D. Edwards & Company Enjoys Unique Distinction After Long Business Career

George W. Edwards, owner of H. D. Edwards & Company, said to be the oldest mill supply house in the state of Michigan, has the unique distinction of never having borrowed a dollar during the fifty-one years of his career as a Detroit merchant and manufacturer.

Mr. Edwards went from New Bedford, Mass., to Detroit on March 12, 1869, and joined his brother, H. D. Edwards, in conducting the rubber and mill supply business which the latter had established in 1855. Upon the death of his brother some years later, Mr. Edwards became proprietor of the Edwards company.

In March, 1919, Mr. Edwards celebrated the fiftieth anniversary of his entrance into business in Detroit by distributing a considerable sum of money among his employes, many of whom have been with him for thirty-five years. Although Mr. Edwards' son-in-law, Joseph M. Schenck, took active charge of the business as general manager in 1914, the former, despite the fact that he is in his seventy-ninth year, is at his office daily and attends to many details.

Mr. Edwards is vice-president of the Detroit Oak Belting Company, for which H. D. Edwards & Company are distributors, and he is manufacturer of the Hartz steel tackle blocks, with a factory in Cleveland; the Joy pneumatic hose couplers and Smith patented belt fasteners, both made in Detroit, and Edwards high heat packing.

H. D. Edwards & Company are distributors of belting, fire hose, cordage, mechanical rubber goods, marine hardware, mill and mining supplies.

J. Gourley Armstrong, Frederick W. Frede, R. A. Storey and George W. Edwards 2d, grandson of the owner, are assistants to Mr. Schenck and they have given Mr. Edwards and him much valuable aid in bringing about the growth and success of the business.

Fall Meeting Postponed

Announcement has been made that the fall meeting of the machine tool section of The National Supply and Machinery Dealers' Association will be held in the Hotel Astor, New York City, on December 2 and 3, instead of in October as usual. It is deemed advisable to wait until after the presidential election has been decided and until the national and international business situation has become more clarified before taking up the matters that will be discussed at the sessions of the machine tool section. At the same time that the machine tool section meetings are being held, the National Machine Tool Builders' Association wil conduct its nineteenth annual fall convention in the Hotel Astor.

New Plant to Open Soon

The Ohio Steel Products Co., Youngstown, will commence operations at its plant in Mineral Ridge, Ohio, during the fore part of this month. Enameled and galvanized conduit pipe and steel tubing for the automobile trade will be manufactured from strip steel. The plant will have a yearly production capacity of 20,000 tons. The Huron Steel Co. has acquired an extensive interest in the Ohio Steel Products Co., and this may mean an ultimate merging of the two concerns. The Huron company is building a new plant in Huron, Ohio. It is understood that plans are to elect F. W. Mettler, president of the Huron Steel Co., and formerly with the Illinois Steel Co., president of the Ohio Steel Products Co.; John A. Logan, Youngstown, vice-president and general manager, and C. E. Doane, Cleveland, who is identified with the Huron company, secretary and treasurer. Capital of the Ohio Steel Products Co. is $500,000.

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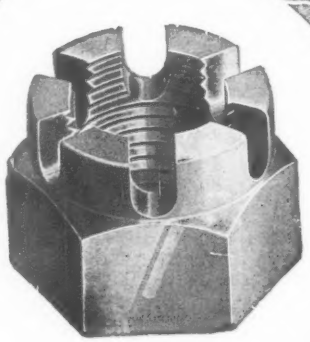
SPECIAL

Screw machine product to specifications.



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THE NATIONAL ACME COMPANY

NEW ENGLAND PLANT WINDSOR, VT. | CLEVELAND, OHIO | CANADIAN SCREW PLANT MONTREAL, P. Q.

BRANCH OFFICES: NEW YORK BOSTON CHICAGO DETROIT BUFFALO

WAREHOUSES: New York and Chicago. WESTERN REPRESENTATIVES: Hughson & Merton, San Francisco. SOUTHERN REPRESENTATIVES: V. A. Moore & Co., Atlanta.

Makers of Gridley Single and Multiple-Spindle Automatics at Windsor, Vermont; and Acme Automatics, Threading Dies, Collapsing Taps and Screw Machine Products at Cleveland, Ohio

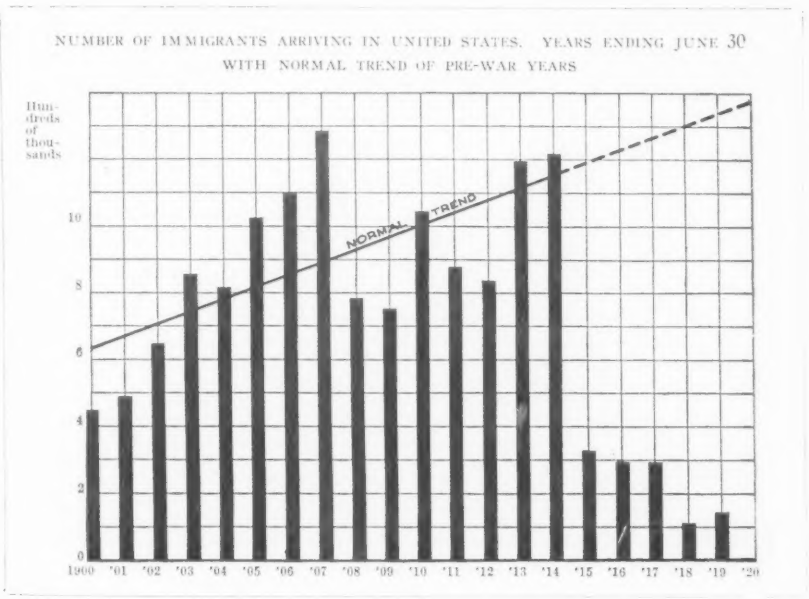
Immigration Revival Anticipated by Experts

Figures Show Big Falling Off in Number of Foreigners Entering America During War Period But Tide Now Seems to be Turning

F. LESLIE HAYFORD,*

Economic Statistician E. I. du Pont de Nemours & Co., Inc.

For many years immigration has been one of the most important factors in the industrial development of the United States. Before the Great War this country was largely dependent upon immigration for the additions to its labor supply necessary to meet the needs of its rapidly expanding industries. The war suddenly shut off the greater part of this stream of immigration; and even since the cessation of hostilities the number of foreigners coming into the country has been exceedingly small. This situation has created fears that the United States may be faced with a serious shortage of labor unless immigration is soon resumed on a large scale.



Without attempting to determine how great a labor supply the country needs, an examination of some immigration statistics may prove of interest.

In the 15 years ending June 30, 1914, a total of 13,377,089 immigrants arrived in the United States. This was an average of 891,805 a year. During the five of these years which immediately preceded the outbreak of the war (1910-1914) the total number of immigrants entering the country was 5,174,701, or an average of more than a million a year.

During the five years ending June 30, 1919 (that is, the five years beginning with the summer in which the war broke out) only 1,172,679 immigrants entered the United States—an average of 234,536 a year, or only a trifle more than a fifth of the number that had been coming before the war.

The effect of the war upon immigration is perhaps more clearly brought out in the accompanying graph showing the total number of immigrants arriving each year from 1900 to 1919, inclusive, with the normal trend of the pre-war years. While the actual falling off of immigration in the years following the outbreak of the war is striking, a comparison of the actual figures with the pre-war trend is even more significant. The normal trend of the pre-war years is indicated by a solid diagonal line, which has been projected (as a broken line) up to 1920. This pre-war trend of immigration has been determined by fitting a straight line to the annual data by the method of least squares. The normal trend line thus determined clearly brings out the fact that immigration was increasing at a very rapid rate up to the time of the war. The projection of this normal trend line shows us what might have been expected had the same forces that were affecting immigration before the war continued.

If immigration had continued after the outbreak of the war at the same rate as before we should have received during the five years beginning July 1, 1914, and ending June 30, 1919, a total of 6,316,425 immigrants. The actual number coming during these five years had dropped off to the low figure of 1,172,679.

A truer picture of the effect of the war upon immigration is gained, however, by an analysis of the excess of aliens entering this country over those leaving it—in other words, of the net increase in our population due to immigration.

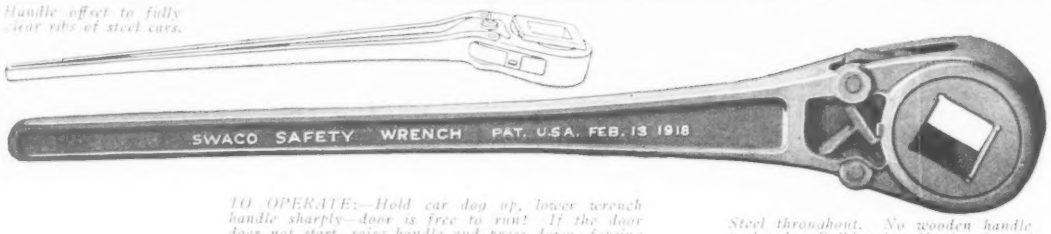
For the five years ending June 30, 1919, the excess of arrivals over departures was only 431,884 or an average of 86,377 a year; whereas during the five years before the war the excess of arrivals amounted to 3,316,146, or an average of over 663,000 a year. For the years ending June 30, 1918 and 1919, this excess had declined to 18,585 and 20,790, respectively, compared with 817,619 in 1910 and 815,303 in 1913.

From July 1 to December 31, 1919, a total of 253,926 aliens arrived in the United States, while 242,652 left, showing a net immigration for the half year of 11,274.

Of course, the figures given above do not represent net changes in the country's labor supply, for they include many women and children. We find, indeed, that the departure of unskilled laborers was more pronounced than the figures given would indicate. During the five years ending June 30, 1919, the num-

*Republished from August issue of *Du Pont Magazine*.

Handle offset to fully clear ribs of steel cars.



TO OPERATE:—Hold car dog up, lower wrench handle sharply—door is free to run! If the door does not start, raise handle and press down, forcing door to open.

Steel throughout. No wooden handle to break. Ball-bearing Head. Special sockets supplied for smaller spindles.

The SWACO Safety Hopper Car Wrench

The automatic safety feature of the SWACO Safety Hopper Car Wrench throws a pawl automatically to safety when the wrench is lowered. This feature is always in readiness, especially if the door should stick, and its safety action is positive. It absolutely protects the workman from harm, even when opening the most dangerous and difficult drop-bottom doors. One man can operate it. It affords maximum speed of manipulation with total absence of risk.

To Dealers—Your line of mill supplies cannot be complete without this modern appliance. Although comparatively new on the market, it has already been widely adopted as standard equipment. It sells readily on demonstration and has an almost unlimited field of distribution. Its certain safe action and economy assure its ultimate universal recognition as a standard tool. Over 150 of the best and largest Dealers are now stocking this tool and enjoying large sales with excellent profits. Retail price $27.50.

Among "SwacO" Safety Hopper Car Wrench users are: The Pennsylvania Railroad, Union Pacific R. R., Chesapeake and Ohio R. R., Reading R. R., American Smelting and Refining Co., Bethlehem Steel Co., Crucible Steel Co. of America, General Chemical Co., Eastman Kodak Co., E. I. duPont de Nemours & Co., Inc., and many other industrial concerns.

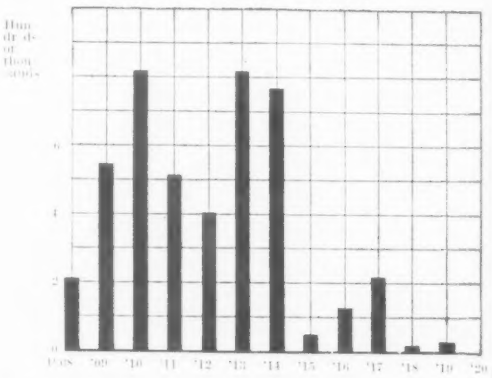
Write today for dealer terms to:

SAFETY WRENCH & APPLIANCE COMPANY, Philadelphia

ber of emigrant aliens leaving the country, who were classed as common unskilled laborers, exceeded by 151,780 the number of immigrant aliens of like classification who entered it. It is true that during this period there was a net gain of 74,563 foreigners who were classed as "farm laborers," many of whom doubtless entered industrial plants instead of going to farms after their arrival here; but even if we deduct this number from our net loss of those classified as unskilled laborers, there would still be a net loss of 77,217 in the five years.

During the last six months of 1919 the situation became even more acute, for only 20,375 immigrant aliens arrived who were classified as common unskilled laborers, while 109,208 emigrant aliens of like classification left the country, a net loss of 88,833 during these six months alone.

CHART SHOWING ANNUAL NET IMMIGRATION FROM JUNE 30, 1907, TO JUNE 30, 1919



This situation has made some observers fear that a very considerable actual reduction of the country's existing labor supply might be experienced in the next year or two. Apparently, however, the tide has now begun to turn. While no immigration statistics for the country as a whole are at present available for the recent months, figures for the port of New York show that as many as 12,000 immigrants have arrived at that port in a single week, and that the excess of arrivals over departures has been as high as 8,000 in a single week. While these numbers are considerably below those of the years immediately preceding the war, they indicate the possibility of a much larger immigration than we have had since 1914.

It is believed by many competent observers that a decided revival of immigration will take place within the next year or two and that, unless drastic restrictions are imposed, we may see the pre-war immigration figures equaled before many years. There are, of course, obstacles still standing in the way. For one thing, our immigration laws now impose restrictions that did not exist before the war. Furthermore, steamship accommodations are not at present available on the pre-war scale and it may possibly be several years before they will be sufficient to take care of as great numbers as came in the years prior to 1914. Restrictions on the emigration of their people may also be imposed by foreign countries. It therefore seems probable that the growth of immngration to pre-war proportions may be delayed for several years. But very much larger numbers than came during the years from 1914 to 1919 may confidently be expected.

Advertising During Depression

Cleveland Manufacturer Urges Publicity During Adverse Periods—Suggests Creation of Reserve Funds in Flush Times

Roy G. Owens, vice-president of The Lakewood Engineering Company, Cleveland, Ohio, has written a letter to Joseph W. Fordney, chairman of the ways and means committee of the House of Representatives, requesting that the government permit business men to accumulate a reserve advertising fund, without paying taxes on it, which fund can be depended upon whenever earnings are too small to justify heavy advertising expenditures.

Mr. Owens believes that the curtailment of advertising during times of business depression intensifies that depression, and that the public becomes alarmed when advertising begins to drop off. He declares that permanent business prosperity can be insured only by proper advertising, and he has suggested the establishment of reserve funds as a means to enable business men to continue advertising during periods of depression. Mr. Owen's letter to Congressman Fordney is as follows:

"It is a well known fact that during times of business depression it is the tendency of manufacturers to curtail their advertising appropriations and expenditures. It is also well recognized that this is the time when appropriations and expenditures for advertising should be increased.

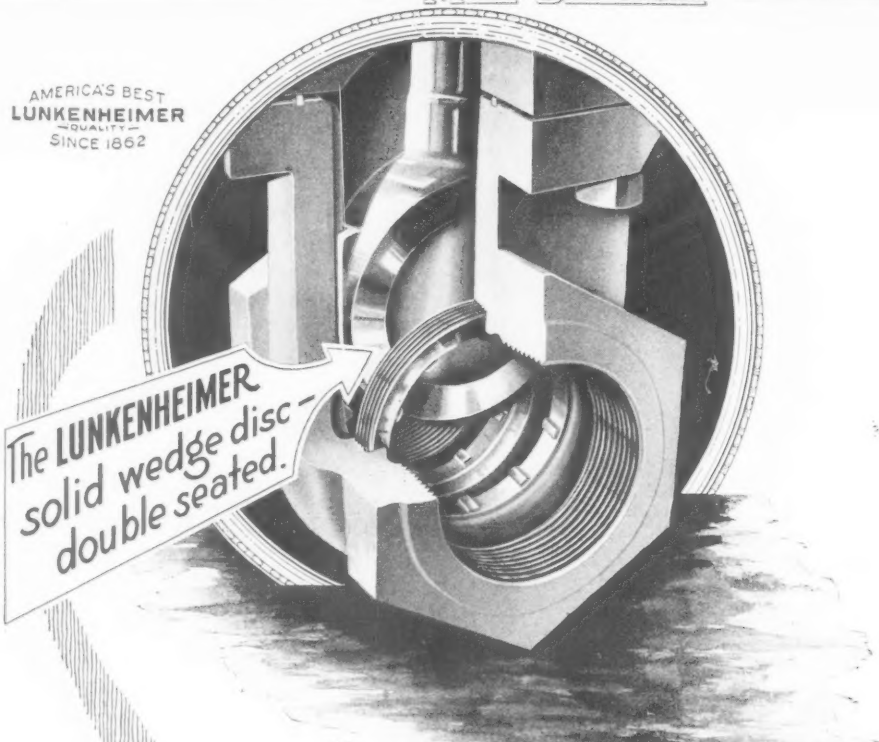
"The progressive, wide-awake manufacturer is alive to the need of advertising to create a demand; he appropriates accordingly. In contrast, we have the manufacturer who only advertises when he has accumulated a large surplus as a result of abnormal demand, and feels that he can spend a few dollars for advertising his product. The latter manufacturer, when he scents a little deviation from 'the big demand,' immediately cuts his advertising appropriation. He virtually pulls his house down on top of him. If means can be found to promote advertising in such times, the reaction will be far less severe and the whole country will be immeasurably benefited.

"We believe that if provision were made whereby manufacturers could set up during times of so-called 'good business' an account to be known as 'Reserve Advertising Fund,' which would be non-taxable and which could be drawn upon for advertising only during a recognized imminency of business depression, a great many manufacturers would take advantage of such condition, thereby minimizing the actual occurrence of a business depression."

In a letter to Mr. Owens, Richard H. Edmonds, editor of the *Manufacturers' Record*, points out the important role advertising has played in the great business activity that has followed the signing of the armistice. He writes in part as follows:

"The activity which has prevailed throughout America since the armistice is, to a very large extent, due to the

AMERICA'S BEST
LUNKENHEIMER
—QUALITY—
SINCE 1862



LUNKENHEIMER "VICTOR" GATE VALVES

is the logical line of Gate Valves for the Mill Supply Dealer because its broad scope covers every requirement.

Four weights, in both Inside Screw Stationary Stem and Outside Screw and Yoke Rising Stem types, available in material combinations to suit all pressures and temperatures.

The Lunkenheimer Solid Wedge Disc design, with the seats threaded into the body in exact alignment with the disc faces is a convincing selling argument, for reliable and economical service to the user. And Lunkenheimer trade journal advertising directs the user to you. Standardize on Lunkenheimer "Victor" Gate Valves.

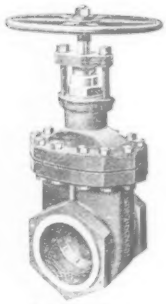


Fig. 602
Heavy Pattern;
Inside Screw Type;
Screw Ends.

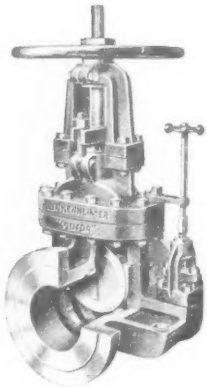


Fig. 894
Extra Heavy Pattern
With Bypass;
Flange Ends.

THE LUNKENHEIMER CO.
—"QUALITY"—

Largest Manufacturers of
High Grade Engineering Specialties
in the World

CINCINNATI

New York Chicago Boston London

6-21-36

superb advertising of the business people of the country. The armistice had scarcely been signed when there was a temporary spirit of reaction and pessimism in the thought of the people generally. They looked for months and possibly years of inactivity and lack of employment, but the government immediately began a campaign urging business men to advertise heavily. It said that those who were not advertising should begin advertising, and that those who were advertising should increase their advertising space.

"Within a few weeks there was created throughout the country a sense of responsibility of business men to create prosperity in the way the government had suggested, and they began a great advertising campaign which proved to the nation that the power of advertising is almost without limit. Men who had never advertised were astonished at the results of advertising, and men who had advertised in a small and perfunctory way were greatly impressed with the power of big broad advertising, and found that every dollar wisely expended brought to themselves and to the country a great profit in the way of increased and universal prosperity.

"The suggestion which you have made to Congressman Fordney is one which, it seems to me, the government could wisely afford to adopt, and I shall look with interest to see what reply he makes."

Exports Should Aid Machine Tool Industry

England and United States Must Supply the World—Markets for Our Goods in South America and Smaller Nations of Europe

L. W. ALWYN-SCHMIDT

The past months have brought a clearing of minds with regard to many problems in the international machine supply situation. They have shown that the influence of Germany upon the world's machine tool business is practically gone, and that there is very little chance for a return of that influence. But they have also brought proof that France, which has taken over the former German iron resources, has not been capable of taking the place of Germany as a purveyor of industrial equipment, particularly machine tools.

This latter fact need not cause astonishment because it is obvious that a country cannot change quickly from one industrial activity to another. In fact, there is a growing conviction that France had never intended making use of all the iron and steel herself, but preferred to export these products in a partly manufactured form. England will most likely be the logical market, and France may find many customers in countries which had not formerly bought much iron and steel for industrial purposes, but have commenced doing so in recent years.

The abilities of such countries to buy the iron and steel available in France and the growing interest taken by them in industrial production have brought about an entirely new situation in the international machine tool field. Before the war, the bulk of machine tools were used in only a few countries. England, Germany, France, Belgium and the United States were using probably half of them. Since the outbreak of the war, however, there have been many changes in international industrial production. Europe not only destroyed much of its economic prosperity during the war; it also reduced its influence upon the industrial affairs of countries outside of that continent. Before the war, many of these latter countries had been supplied by Europe with all the industrial products they required. Receiving from Europe all of these goods they needed, they had not gone into manufacturing extensively themselves. When the war opened, this European influence upon the industrial development of these countries ceased. South America was hardest hit by this change in affairs. One means of relief suggested was to import goods which could not be obtained through domestic production from countries not immediately affected by the war, which were, in this case, the United States and Japan. The other suggestion was to commence home manufacturing.

South America shared its position in a peculiar manner with certain European countries, which, while highly developed industrially, had still found it convenient to rely upon imports for many of their industrial goods. Being better prepared than the South American countries, however, the principal need of these European nations was not the acquirement of the goods themselves, but the machinery necessary for extending their own manufacturing activities.

When the war ended, the world faced an entirely new distribution of industrial production. The industrial capacities of Sweden, Norway and Spain had grown immensely, possibly far in excess of the actual requirements of these countries under normal conditions, while the trade of South America had found new routes, and the growth of domestic industries in all of the principal countries of that continent had been noteworthy.

This situation must materially affect the export of American machine tools in the future. Following the practical elimination of Germany as a factor in machine tool production and the prolonged incapacity of France, only England and the United States are possible sources of machine tool supply for the remainder of the world. England has undoubtedly come out of the war stronger in many respects than it was when the war opened. It has greatly increased its industrial equipment, and the large surplus of iron and steel now available in France will probably help to supply English smelters with these products at a comparatively low cost because of the small expense of transportation across the water from Lorraine to England. That country has, therefore, exceptional opportunities for building up a machine tool industry which will make it the leading builder of machine tools in Europe. Previous to the war, English machine tool exports averaged $5,000,000 annually, as opposed an average of $14,000,000 reached by the United States during the last three years before the European conflagration. The machine tool manufacturing capacity of England has since greatly increased, however, and the efficiency of machine tool production has been raised by close co-operation among the leading producers.

The ending of the war has brought to England a new set of imperial problems, however, which will exert considerable influence upon the direction of that

HOLLOW CENTER PACKING

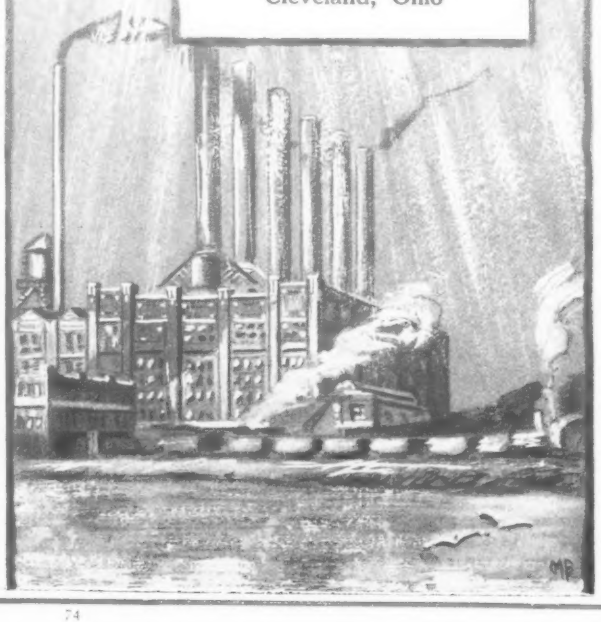
OVALHOLE

"OVALHOLE" PROTECTS

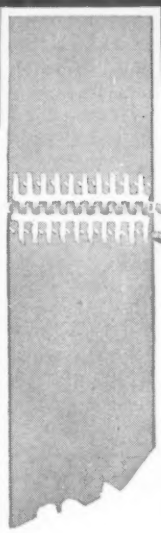
the POWER PLANTS IN YOUR CITY

The jobber who handles Ovalhole Packing has a distinct advantage over his competitors. If you are not selling Ovalhole Packing, write us for exclusive agency proposition.

The Hollow Center Packing Company
Cleveland, Ohio

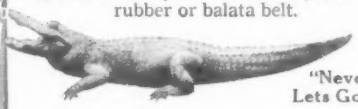


The World's Greatest Belt Lacing



Best for Every Service

Consider carefully the 100% efficiency of Alligator Steel Belt Lacing in satisfying your requirements. You will find it best on every kind of leather, cotton, rubber or balata belt.



"Never Lets Go"

Simple, Strong, Economical—Preferred by All Who Know It

Everywhere in Industry, where belting is required, Alligator Steel Belt Lacing is known and preferred.

Short, flexible joint insures smoothness of operation. Sectional Steel Rocker Hinge Pins (patented) form frictionless "rocker" for the flexible joint. In damp or heavy work, where other lacing pulls out, Alligator Steel Belt Lacing ***holds.***

ALLIGATOR

TRADE MARK REG. U.S. PAT. OFFICE

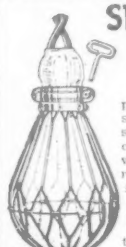
STEEL BELT LACING

Nothing Needed But a Hammer

In a working time of less than three minutes, the average belt can be laced with Alligator Steel Belt Lacing. No special skill or training needed. No tool but a hammer to insure a perfect joint. Consider this saving in help, time and money over other methods of lacing.

Alligator Steel Belt Lacing saves the belting because the pull comes against the edge of the teeth and not the flat. It becomes a permanent part of belt—does not pull out—and replacements even in hardest use are practically unknown.

FLEXCO-LOK STEEL LAMP GUARDS



A mechanically perfect guard—sold at a decided saving to a purchaser. All sizes, with or without reflectors, for standard brass or weather-proof sockets. Either portable or stationary types, with patent self-retaining lock screw or plain round head screw. Not stocked in London.

A Large Surplus of Strength

Note the ***double staggered teeth*** (shown in illustration)—they give the extra strength to Alligator Lacing.

Ask Your Jobber—or Write Now for Prices, Samples and Full Details

Write today—or use the coupon. Let us quote you prices and send samples and full details regarding Alligator Steel Belt Lacing. Made for belts of all sizes from tape to five-eighths inch thickness.

Hundreds of thousands of men the world over are now recommending and using no other lacing than Alligator—The World's Greatest Belt Lacing. It will be a big saving and a wonderful convenience for you. Use the coupon. Tear it off now. Write us at once.

FLEXIBLE STEEL LACING COMPANY
4633 Lexington Street Chicago, Ill., U. S. A.
135 Finsbury Pavement, London, E. C., England

Send This Coupon!

FLEXIBLE STEEL LACING COMPANY
4633 Lexington Street, Chicago

Gentlemen: Kindly send price lists, sample and complete details of Alligator Steel Lacing. Also send prices and descriptions of Flexco-Lok Lamp Guards.

Check if Desired.....

Firm Name.....

Address.....

Name of Inquirer.....

(Tear This Coupon Out — Send it Today)

country's industrial activities. The empire has proved a valuable fighting unit, but its industrial organization has been lacking. The present British tendency is in the direction of first building the industries in the empire outside of England sufficiently to make them reasonably independent. In doing so, England foregoes some of its principal advantages in its relationship to the empire, but it opens new vistas for many of its industries which in the past found their principal markets outside the British possessions. The English machine tool industry will soon feel the effects of this development through an increasing flow of orders from all parts of the British dominions. In fact, the backwash of this evolution of the outlying districts of the British empire can be clearly traced in our own exports of industrial materials, and, incidentally, machine tools, to such markets as Australia, South Africa, India, etc. It is only natural that the bulk of the orders to these markets should go to the mother country, and while American exports to them have been satisfatcory, they have shown no considerable increase during recent months and there is already some evidence of their becoming stationary.

The crisis in English machine tool export affairs will come at the moment when a clear answer can be given to the question whether the British imperial demand for machine tools will become strong enough to consume practically all the surplus English production, or whether, in the meantime, this industry will have been sufficiently developed to care for both domestic and imperial consumption and still have a comfortable surplus for export to third parties. At the present time, the United States has a very extensive market for machine tools in France, and the published figures for the first ten months of the present fiscal year show a drop in machine tool exports of something over $4,000,000 only, the exact figures showing that exports during the first ten months of the last fiscal year amounted to $45,031,633 and that they have amounted to $41,180,478 thus far in this fiscal year. In each of the last two years, France has taken machine tools valued at $11,000,000, which is $6,000,000 behind her purchases in 1918. England, however, has fallen off from her last year's purchases to the extent of $6,000,000. Thus it can be plainly seen that the new forces operating in the English machine tool industry are already affecting our sales.

The gravity of the competitive situation in international machine tool distribution will not lie in the business with such countries as England, France, or even Germany, however, but in those new markets where aspirations to compete with the rest of the world for a share in industrial production have arisen. The test of the future strength of the American machine tool industry will lie, therefore, in its ability to acquire the business of these latter countries, which include some of the minor industrial nations of Europe and the whole of South America. Imperial dominions should absorb most of the products of the English machine tool industry.

To make the export of machinery profitable to exporter and importer alike, it is necessary that the exporter should not only have a surplus of exportable industrial equipment, but that this equipment should be of a kind that can be used conveniently in the country of the importer. The secret of the great development of the old German machine tool exports in the face of the much superior industrial and technical development of the machine tool making industries in England and the United States lay in the fact that the German machine tool manufacturers catered especially to the markets to which they intended to sell. Germany cheerfully left the manufacture of the higher grades of tools to the United States; in fact, bought tools from this country for the purpose of making the very machine tools it exported.

The war has improved the position of the American machine tool industry in this respect, however, because the manufacturing standards of the world have been raised. The break of nearly five years in the supply of the more simple machine tools has aided in removing them from competition. The general raising of the standard of industrial equipment applies particularly to the minor industrial countries of Europe, such as Spain, Sweden and Norway, but it also applies to a considerable extent to South America and will apply more there as industry progresses.

Although there has been a decline in our machine tool exports to Norway, Spain has increased its imports of American machine tools. Spain's imports of American machine tools amounted to $1,250,000 during the first ten months of 1918, but they declined to $517,000 during the same period in 1919. In the first ten months of 1920, however, they have reached $1,262,000. Sweden has nearly doubled its purchases during the present fiscal year, and so has Cuba, while Brazil and practically all other South American markets show remarkable activity. Half of all the export trade of our machine tool industry is carried on today with countries that did not take a leading part in war purchases, and the amount of trade is still larger than our export trade in machine tools before the war.

All of these facts indicate that exports will play a considerable part in the future development of the American machine tool industry. The continuance of so large an export movement at a time when the war has been ended is certainly gratifying, and it shows that the apprehensions that the end of hostilities would cause a reduction in output have been without foundation thus far. Furthermore, there is no reason to expect any material change in the present situation.

WORKERS TO BE REPRESENTED

Employes to have Voice in Management of Federal Electric Company—Many Attend Housewarming

Announcement that the Federal Electric Company is contemplating plans for giving employes a voice in the management of the company was made by President John F. Gilchrist during an address at a housewarming at the concern's new plant, Eighty-seventh and State streets, Chicago, recently.

"We want our employes to feel that their efforts are being appreciated," said Mr. Gilchrist.

"We cannot give a definite outline at present of what the plan will be, but it will be in conformity with some of the new ideas of employes' representation."

He informed the employes that they could purchase stock in the company at almost any terms convenient to themselves and said he was pleased over the fact that approximately forty per cent of the workers are already stockholders.

Dancing, baseball games, field events, vaudeville, aeroplane ascensions and a luncheon were the features of the housewarming, which was attended by more than a thousand persons.

"R F & C" brand

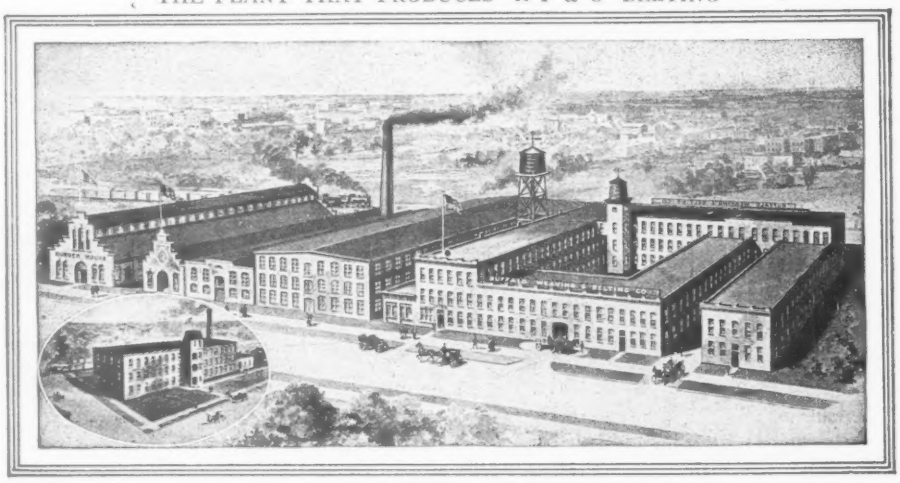
Solid Woven Non-Separable Ply

Rubber Belting

BUFFALO WEAVING & BELTING CO.

Manufacturers & Pioneers Solid Woven Belting

THE PLANT THAT PRODUCES "R F & C" BELTING



Just a few of the reasons why Mill Supply Houses
Should Sell "R F & C" brand Rubber Belting

Solid Woven—No plies to separate—No seams to open or split.

Solid Woven—Strongest, more flexible, better transmission, less slip.

Solid Woven—Unaffected by atmosphere, less stretch and shrink.

Solid Woven—At a price less than a good rubber belt.

Sold to jobbers only—Exclusive Territory Plan

Buffalo Weaving & Belting Co., Buffalo, N.Y., U.S.A.

Manufacturers

"R F & C" brand Rubber Belting, "R F" brand Pulley Lagging
"Buffalo" brand Solid Woven White Cotton Belting
Mechanical Rubber Goods, Webbings of every description
BUFFALO brand Red SHEET PACKING is Better

Our Products

Made in America—Sold wherever Industry Exists
Jobbing Accounts Only Solicited

What Is
An Exclusive Dealer Proposition?

CHARLOTTE ANSWERS:

A proposition which does not straddle the fence by selling the dealer a big stock, then, takes the desirable orders direct.

A proposition which creates confidence and enthusiasm among your salesmen, giving them by personal contact and special advertising a knowledge of the line so that they can meet factory competition.

A proposition whose advertising to the Dealers' prospect is direct and personal.

A proposition which can be depended on to make the Dealer a part of its own organization, never selling in the Dealer's territory without his consent and approval.

A proposition which keeps down overhead expenses to make a price which will insure the Dealer a good margin of profit.

A proposition which represents a quality that will completely sell the Dealers' salesmen. They must be sold before they can sell.

CHARLOTTE LEATHER BELTING CO.

CHARLOTTE, NORTH CAROLINA

WESTERN DISTRIBUTING CENTER AND WAREHOUSE
HUNTER BUILDING
337 WEST MADISON STREET
CHICAGO

CHARLOTTE 1906

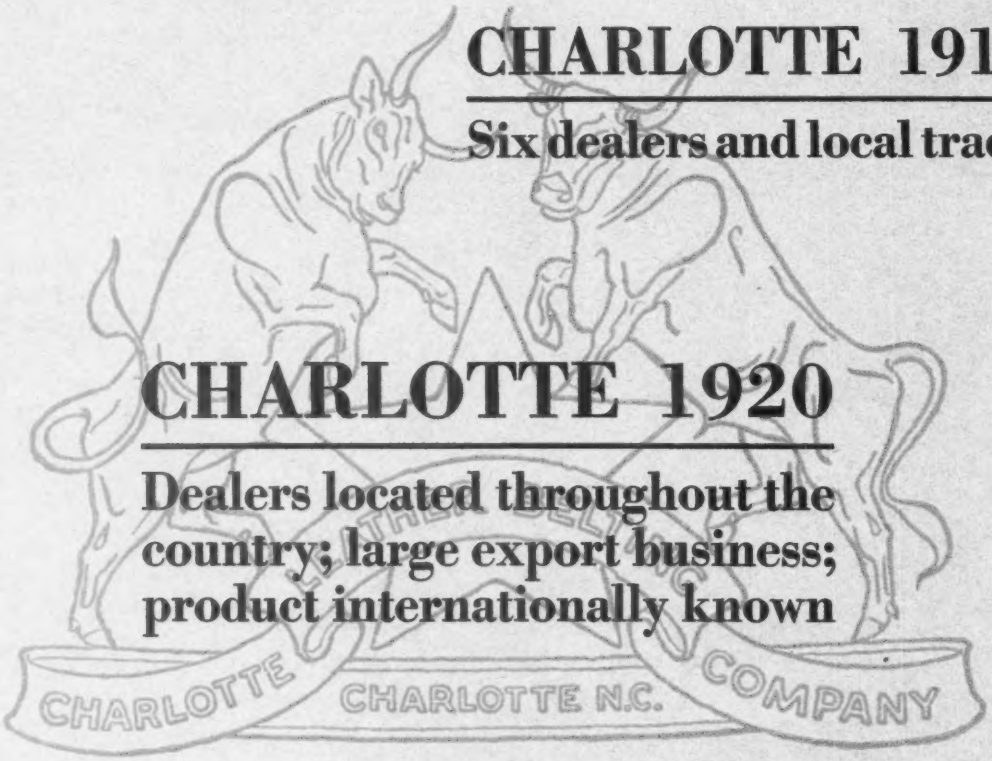
A small local shop

CHARLOTTE 1915

Six dealers and local trade

CHARLOTTE 1920

Dealers located throughout the country; large export business; product internationally known



This striking growth is the result of adhering to our original decision to sell

CHARLOTTE CLEAN QUALITY LEATHER BELTING—

a product which convinces the Dealers' salesmen it is the best—exclusively through the Dealer.

Advance Made in Anti-Corrosion Engineering

Practical Methods Used for Preventing the Destruction of Steam and Hot Water Pipes — Deactivator Operates Successfully

WM. H. WALKER, PH. D.*
Director, Division of Industrial Research, Massachusetts Institute of Technology

It is a truism to say that the pure science of yesterday is the applied science of today. In 1907 the research laboratory of applied chemistry of the Massachusetts Institute of Technology published an article in which, for the first time, the function of oxygen in the corrosion of iron was clearly set forth. Other influences were analyzed, and the true nature of the phenomenon of rusting was explained. Briefly the basic principles underlying the corrosion of iron are as follows:

Corrosion is an electrolytic phenomenon and can be understood on purely electro-chemical grounds. It takes place at ordinary temperatures only in the presence of water and through the following reaction: $Fe + 2H^{\cdot} \rightarrow Fe^{\cdot\cdot} + 2H$.

This means that a metallic iron atom, electrically neutral, interacts with two hydrogen ions present in the water and which carry electrical charges; the result is the production of an iron ion which takes up the two electrical charges from the hydrogen ions and the deposition of two atoms of hydrogen. Energy is lost to the surroundings and appears as heat.

Among the factors which influence the action, the first is the solution pressure of the iron. This is constant for all samples of iron under constant conditions, but may be influenced by a number of agents. Thus the immunity of iron to corrosion in solutions of chromic acid is caused by the passivity of the iron—a thing, which, whatever its true nature, is equivalent to lowering the electrolytic solution-pressure of the metal.

The impression of an external e.m.f. may also be considered as equivalent to a change in solution-pressure. This may be either positive or negative in its direction. If the potential employed be mechanically generated, we speak of it as "stray currents," but if electrochemical in its origin, it is described as the accelerating or retarding effect of other bodies. Thus iron, which itself is incapable of corrosion when imbedded in concrete, is severely attacked if its solution-pressure be sufficiently increased by having superimposed upon its own potential an external e.m.f. due to stray currents. On the other hand, the potential of iron may be so depressed by an impressed e.m.f. due, for example, to the solution-pressure of zinc, that the iron in contact with zinc will not corrode.

A second consideration is the number of the hydrogen ions. The greater the concentration, the more rapid will be the corrosive action. Hence, if any substance forming hydrogen ions, such as carbonic acid or bicarbonate or sulphur dioxide or any acid-forming compound, be present, corrosion is accelerated. On the other hand, if an alkaline material such as soda ash or caustic soda be present, the number of hydrogen ions is decreased and corrosion is retarded. If enough hydroxyl (the active ion of an alkaline compound) be present, practically all of the hydrogen will disappear and corrosion will entirely cease.

A third factor is the ease with which the hydrogen ion reaches the iron. For example, the wonderful resistance of sheet steel containing small quantities of copper to corrosion when used as roofing is due to the adherent nature of the film of oxide produced when corrosion starts. This film, as in the case of the aluminum oxide coat on metallic aluminum, effectually protects the metal and practically prevents further corrosion.

A fourth item, the osmotic pressure of the iron ions, is so small in any case that it is negligible; in the presence of oxygen, it is kept extremely low owing to the formation of insoluble iron hydroxide.

Fifth, there is the deposition of the hydrogen and its removal by the depolarizing action of oxygen. The accelerating action of metals such as platinum, copper, and lead, and materials such as coke and mill scale, upon the corrosion of iron are due alone to the aid these bodies offer to the elimination of the hydrogen produced by the corrosion reaction, owing both to the low overvoltage of hydrogen upon these substances and to the high catalytic action of these materials on the hydrogen-oxygen reaction by which the deposited hydrogen film is removed. The retarding action of the hydrogen film which is stable in the absence of oxygen and any acid-forming compound is so controlling, that from this point of view, oxygen (or air) may be said to be the cause of corrosion.

Both laboratory and large-scale experimentation demonstrate that the rate of corrosion is directly proportional to the amount of oxygen dissolved in the water. Furthermore, the curve representing the results passes through the zero point, showing that if no oxygen be present, there will be zero corrosion.

It is interesting to note how these scientific facts have been made the basis of improvements in engineering practice, and how the dangers and losses due to the corrosion of iron are constantly being decreased.

Two recent advances in anti-corrosion engineering are, first, a process of eliminating the mill scale from the inside of steel pipe; and second, a process for removing the dissolved oxygen from feed water for boilers or hot-water supply systems. The first depends upon the fact that there exists a temperature where steel is plastic and easily deformed, but where mill scale is brittle and non-elastic. If now a welded pipe be cooled to this temperature, and held there while it is subjected to mechanical working, the pipe is not permanently deformed but the scale loses its adherence and falls off. Deprived of its accelerative centers of corrosion, such a pipe, while still subjected to corrosion, suffers uniformly but slightly over its entire surface, instead of concentrating such action on the exposed points between the mill scale layers, with the consequent formation of dangerous pits and seams.

The second advance depends upon removing from feed water, by the regulated and accelerated corrosion of a cheap form of iron, all of the dissolved oxygen which the water naturally contains. The disappearance of the oxygen is due to two effects. Part of it is consumed in uniting with the hydrogen set free by the dissolving iron, while the remainder is consumed in oxidiz-

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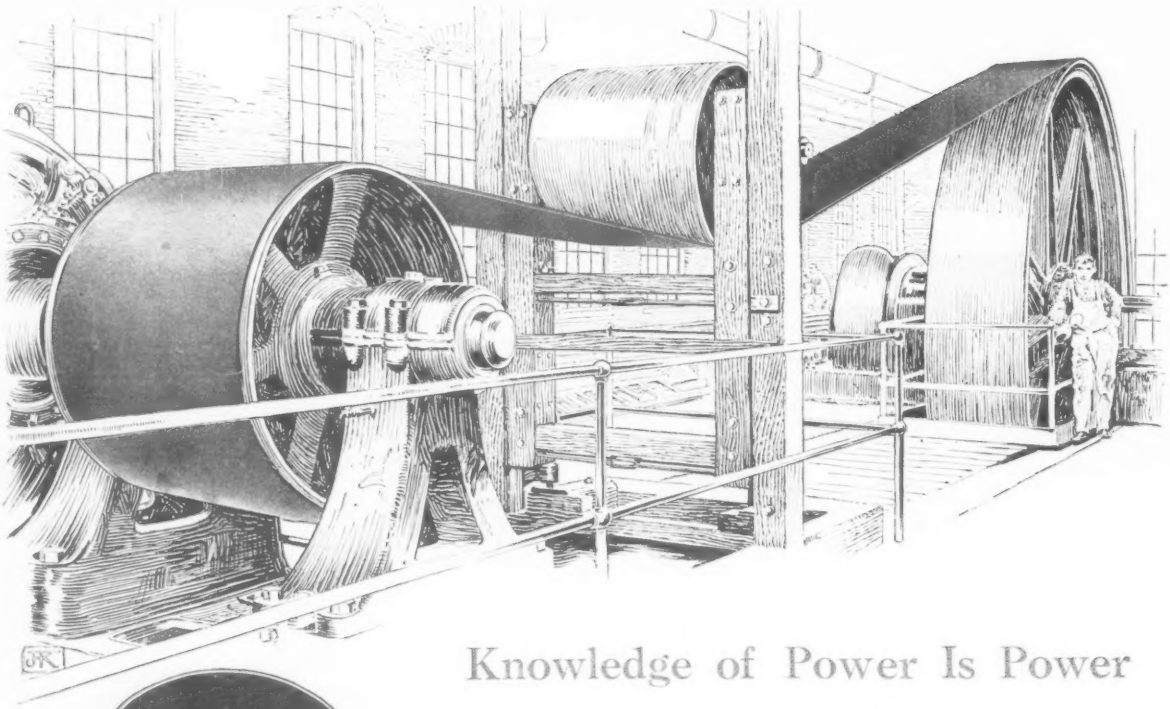

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37½" Heart Double, main drive belt of the Acme Harvesting Machinery Co., Peoria, Illinois. Transmitting 350 to 450 horsepower. Heart Double made from strictly first quality center stock Oak Tanned leather is recommended for use on main drives or other installations where power requirements are heavy and pulleys large in diameter (18" and over).

We have enjoyed for sixty years the deep satisfaction of making the leather belting that drives the wheels of thousands of leading industrial plants. Our pride in our product is justified by the product's widespread use.

More recently by long, costly, and intensive investigations, our belting engineers have reduced leather belting power transmission to an exact science. We feel it our privilege to give the results of our work to belt users in general without any obligation on their part in return.

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By standardizing Graton & Knight brands of leather belting both in their manufacture and in their application, we are able to put *the one* proper belt on every class of drive.

The Graton & Knight Standardized Series of Leather Belting contains a belt for every need. Given the transmission problem, a belting expert can select the right belt on the basis of the work to be done.

We invite you to call upon our belting experts without obligation to yourself.

Write for our book, "Standardized Leather Belting"

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ing the ferrous hydroxide formed by this solution to the more stable form familiar to all as rust. Obviously, if ferrous hydroxide be introduced into the water from without, it will quickly unite with the dissolved oxygen and in this way permit the separated hydrogen to protect the iron continuously from further solution.

Water from which the free oxygen has been removed is no longer active in producing corrosion, and hence an appartus for removing it is called a "deactivator." A number of installations have been made in apartment houses in which serious loss had already been occasioned by clogging of the hot-water supply system with accumulated rust, by leakage due to complete failure of the pipes owing to corrosion, and by constant complaints by the tenants of the presence of rust in the water supplied.

That this removal of oxygen is accompanied by highly beneficial results is shown by comparison of the present and past conditions of the supply system of one apartment. At the time when the deactivator was installed, March, 1917, the hot-water system had been in service for eleven years, the supply tank had been corroded through and subsequently plugged in three separate places, numerous leaks had occurred in the piping system, and the pressure at the top of the house had fallen to a very low value. Since the deactivator was placed in service there have been no further breaks in the tank or system, the pipe lines have cleared themselves so that the pressure is normal, and the water supply to the tenants is free from rust.

The logic of the process is convincing. It is much cheaper and vastly more convenient to corrode away 100 pounds of sheet metal easily replaceable in the basement, than the same weight of piping throughout the house where replacement is exceedingly difficult and expensive.

Pressure Causes Road Wear

Road Impact is Governed by Weight Truck Carries Below Springs

R. E. FULTON
Vice-President, International Motor Company.

There is probably no more vital nor widely discussed topic of interest in the motor truck industry just now than of the relation of heavy-duty trucks to road wear. Many opinions have been expressed that large capacity vehicles, by virtue of their greater weight, are in some measure responsible for excessive road deterioration.

No one realizes better than the motor truck manufacturer the necessity for putting into force legislation which will preserve the roads and enable this country to approach more rapidly its ultimate state of highway perfection. It is doubtful, however, whether the policy now pursued of restricting large capacity trucks will be effective in accomplishing this end. There are but two possible ways of preserving the roads through legislation—either by reducing the total tonnage of traffic passing over the roads or by decreasing the road wear per ton of material transported.

Barring of the heavy duty truck is an attempt to save the roads by the first method. The elimination of this most economical of motor transportation units tends to make the cost of highway transportation prohibitive. If eliminating seven and one-half ton trucks would divert the freight carried in them to some entirely different transportation agency then its elimination would reduce road wear, but the other carriers are not even able to cope with the traffic already in their own legitimate sphere. Therefore, if this freight is to be moved at all it must go over the highways in a larger number of light vehicles, regardless of the increased cost of such transportation.

The object of prohibiting the seven and one-half ton truck is apparently to decrease total tonnage over the highways. Let us see how it works out. The average truck of one ton capacity weighs by itself approximately two tons. On the other hand, in a seven and one-half ton truck there is less than one ton of vehicle weight for each ton of freight capacity. This means that in transporting seven tons of material in one ton trucks, twenty-one tons of traffic (total weight of vehicle and cargo) will pass over the roads, whereas if transported in a seven and one-half ton truck the road will have to bear only fourteen tons of traffic. In other words, the tonnage formerly shipped in seven and one-half ton trucks would have to be decreased thirty-three per cent before there would be any actual reduction in the volume of traffic. Furthermore, to even approach the economy of the heavy duty truck in bulk hauling, the light vehicle must resort to excessive road speeds, which have been definitely proven to be more destructive than increased weight.

Although it might be advisable at the present time to decrease the tonnage transported over highways, it is not possible to do so because there is no other agent capable of taking over this traffic. Thus the only alternative is to direct legislation toward reducing the road wear per ton of materials transported. The results of tests recently conducted by the bureau of public roads at Washington indicate clearly the way in which this can be done. These tests show that the road impact is the principal cause of highway destruction, and that the road impact does not necessarily increase in direct proportion to the size of the truck but is governed by the amount of weight which a truck carries below its springs. For instance, a five and one-half ton chain-driven truck, fully loaded, delivered only sixty-eight per cent of the road impact pressure produced by a three ton shaft-driven truck operating under the same conditions. This is accounted for by the fact that a chain-driven truck carries all of its driving mechanism on the frame above the springs, whereas in a shaft-driven truck the entire weight of the final drive and its housing rides directly on the rear axle, and the blow which this delivers to the road is unrelieved by springs.

December Meeting Arranged

Sessions of the newly organized professional sections on management, power, fuels, machine shop, railroads and textiles will mark the 1920 meeting of the American Society of Mechanical Engineers in the Engineering Societies Building, New York City, December 7 to 10, inclusive.

"Commander" at work

POWER
—*and Lots of It!*

A Turn of the Switch—and all the intensive skill, experience, field work and research work developed and accumulated by Goodrich in a half-century are turned to your advantage in Goodrich "Commander" Transmission Belts.

A Turn of the Switch—and Goodrich Belting efficiency wipes out power losses.

A Turn of the Switch—and, through "Commander," slippage disappears.

A Turn of the Switch—and with Goodrich Drive Belts your belting problems can be forgotten.

For main drives—"Commander." For high speed pulley work—"Marathon." At any and all times Goodrich Belting experts are glad to give you the benefits of their experience—without obligation. Write.

Goodrich "Commander" Transmission Belts

THE B. F. GOODRICH RUBBER CO.
Akron, Ohio

General-News from the Field

PERSONALS.

Samuel P. Broome has resigned as assistant general manager of the sales of the A. M. Byers Co., Pittsburgh.

W. E. Manning, general sales manager of the Youngstown Sheet & Tube Co., has been elected president of the Board of Trustees governing the Y. M. C. A. at Youngstown, Ohio.

Wilford L. Stork has resigned as foundry superintendent of the Detroit Valve & Fittings Co., Wyandotte, Mich., to become works manager of McCord & Co., West Pullman, Ill.

Robert E. Cligan, sales manager Bock Bearing plant, Toledo, Ohio, of the Standard Parts Co., has been made general manager of that plant, succeeding George E. Kleinert, retired.

H. L. Schmieder, for many years superintendent of the Advance Tool Co., Cincinnati, is now representing the Langhaar Ball Bearing Co., Aurora, Ind., in Milwaukee and vicinity.

E. A. Munson has resigned as chief clerk of the traffic department of the Youngstown Sheet & Tube Co., to become associated with the American Tar Products Co., at the Youngstown office.

Frank J. Farrell has been appointed Eastern representative for the Precision & Thread Grinder Manufacturing Co., Philadelphia, manufacturer of the multi-graduated precision grinders.

Paul Hoffman, formerly of the order department of Norton Co., Worcester, Mass., is now Philadelphia district manager of the grinding machine division, with headquarters at 324 Bulletin Building.

Harris E. Whiting, Graton & Knight Manufacturing Co., Worcester, Mass., has been made factory manager of Edward R. Ladew Co., Inc., Glen Cove, L. I., a subsidiary of the Worcester company.

A. F. Bassett has been appointed by the Hyatt Roller Bearing Co., as sales engineer for Detroit and surrounding territory. Mr. Bassett has been associated with the Hyatt company for a number of years.

Edward Walton, director of personnel at the Cincinnati Ball Crank Co., Cincinnati, has been elected president of the Cincinnati Employment Managers' Association, succeeding George Halsey, who recently resigned.

E. W. Brown, assistant blast furnace superintendent of the National Tube Co., at Lorain, Ohio, has been made superintendent of blast furnaces, docks and coke ovens of that company, succeeding Arthur J. Boynton, resigned.

E. F. Vogel has been appointed superintendent of the by-product coke oven department of the Youngstown Sheet & Tube Co., succeeding L. H. Underwood, who has become associated with the American Tar Products Co., as vice-president.

Charles G. Barrett, formerly sales engineer of the marine department of Fairbanks, Morse & Co., New York City, has become associated with the Worthington Pump & Machinery Corporation, Blake & Knowles Works, East Cambridge, Mass.

A. H. Grayburn, for the past four years assistant to the vice-president of the Norma Co. of America, Long Island City, N. Y., manufacturer of ball and roller bearings, has been made assistant secretary and assistant treasurer of the company.

Torsten A. Gyllsdorff and John M. Biles have resigned from the Detroit Reamer & Tool Co., Detroit, to accept positions, respectively, as secretary and superintendent and treasurer and general manager of the Standard Reamer & Tool Co., Detroit.

William C. Briggs, sales engineer and New York manager of the Shepard Electric Crane & Hoist Co., has become vice-president in charge of manufacturing of the Franklin Moore Co., Winsted, Conn., manufacturer of electric hoists, spur geared chain blocks and small electric cranes.

Thomas S. Green, until recently with the sales force of the Norton Co., Worcester, Mass., has sailed for France, where he is to act as resident manager of the Compagnie des Meules Norton, a grinding wheel plant recently acquired by the Norton Co., which operates at La Corneuve, a suburb of France.

E. C. Comstock, W. E. Gillespie and P. W. Malloy have joined the selling forces of the Fort Wayne Engineering & Manufacturing Co., Fort Wayne, Ind. Mr. Comstock is covering North Dakota and western Minnesota; Mr. Malloy, northern Minnesota, and Mr. Gillespie southern Minnesota and northern Iowa.

Mallory Bedingfield, manager of the mill supply department of the James Supply Co., Chattanooga, Tenn., has resigned his position to take charge of the Frisco plant of the Magnolia Metal Co. Mr. Bedingfield was formerly representative of the Magnolia Metal Co. in the south Atlantic states and will take charge of his new duties at San Francisco, September 1.

F. M. Rodgers, London, England, has been appointed European manager of the Westinghouse Electric International Co., East Pittsburgh, Pa. J. W. White has been appointed manager for Cuba and will have offices in the Royal Bank of Canada Building, Havana, Cuba. L. T. Peck has been appointed manager for Argentina, with headquarters at Barolome Mitre 754, Buenos Aires.

C. N. Leo, for several years in charge of the warehouse sales for the W. M. Pattison Supply Co., Cleveland, is now associated with the Hess-Schenck Co., 221 St. Clair avenue, Cleveland, in the capacity of sales representative. C. R. Syme, formerly Dayton sales representative of the W. M. Pattison Supply Co., will represent the Hess-Schenck Co., in the Southern Ohio and Indiana territory. Mr. Syme will be stationed at Dayton.

Norman Bell has been appointed assistant sales manager of the Norma Co. of America, Long Island City, N. Y. Mr. Bell has been connected with this company for three years as sales engineer. His training in the mechanical and automotive fields includes association with a leading British manufacturer of motor cars and four years' service in charge of the motor accessories department of the Lunkenheimer Co., Cincinnati.

H. F. Griffith has been appointed assistant to the general manager of the Westinghouse Electric International Co., of East Pittsburgh, Pa. G. H. Bucher has been appointed assistant to the general manager in New York City. A. B. Cole, assistant manager of the Department of Publicity of the Westinghouse Electric & Manufacturing Co., of East Pittsburgh, has been placed in charge of the advertising and promotion work for the Westinghouse Electric International Co.

P. D. Preston, for many years associated with the Simmons Hardware Co. and for several years secretary in charge of purchases, has resigned to become associated with the Southern Hardware & Supply Co., St. Louis, Mo. He recently visited Europe to study conditions over there as related to the hardware business, and represented the St. Louis Chamber of Commerce at Paris, France. In his new connection he will be vice-president in charge of purchases.

The following board of directors was elected at the annual stockholders' meeting of the Peck, Stow & Wilcox Co., Southington, Conn.; Governor H. M. Holcomb; John M. Holcombe; F. L. Wilcox, Berlin; Frank C. Summer, Hartford; Luke E. Fitchthorne, Southington; S. W. Treadway; T. J. Roy and G. S. Case, Cleveland; Albert R. Sessions, Bristol. The officers elected were L. E. Fitchthorne, president; T. J. Roy, vice-president; Frank D. Taylor, secretary; Edwin N. Walkley, treasurer. Harry J. Parliman, assistant secretary and auditor.

W. L. Chandler, of the Dodge Sales & Engineering Co., Mishawaka, Ind., who has served as chairman of the Standardization Committee of the National Association of Purchasing Agents since the formation of that committee a number of years ago, has just been nominated for the office of president of that National Association. The Universal Danger Emblem, adopted by the National Safety Council several years ago, was the result of research work done by him. His investigation of 600 employe benefit associations has served to pilot hundreds of corporations

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BELTING
TRADE
A RICH HARVEST MOON
FOR DUXBAK USERS
The Harvest Moon is here and you will gather the rewards of your year's labor, your plentiful crops, whether in Industry or on the Farm. Machinery has been of little use to you unless properly belted and
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THINK DUXBAK
the belt of Universal use. Even the Harvest Moon reflects the Duxbak trade-mark!
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in the conduct of such organizations. Mr. Chandler is an earnest advocate of standardization of catalogs.

Rene J. Brault, formerly master mechanic and superintendent of Standard Steel & Bearings, Inc., Plainville, Conn., has resigned and with his brother, Herve Brault and William Downham, New Britain, Conn., has formed a company under the name of the Plainville Engineering & Supply Co.

Charles H. Dankmeyer has formed the Republic Belting Co., Inc., Baltimore, Md. He has acquired the Albrecht property on Smallwood street, and is erecting a new plant, in charge of Huldreich Egli, a native of Switzerland. The superintendent who will have charge of production was for many years associated with the Mt. Vernon-Woodberry Mills, and for the last fifteen years has been engaged in the belting business.

B. G. Koether, vice-president of the Hyatt Roller Bearing Co., New York City, has been made assistant general manager of the Hyatt division of the General Motors Corporation. Although he still remains as vice-president of the former company, he has relinquished his duties as director of sales and advertising, to devote his entire time to increasing production. He will make his headquarters at Harrison, N. J. C. M. Eason, who formerly was connected with the tractor department of the Hyatt company, has been appointed to succeed Mr. Koether as sales manager. For the past several months, Mr. Eason has been general manager of the Engineering Development Co., Moline, Ill.

FACTORY ADDITIONS.

The McCaffrey File Co., Philadelphia, is building a two-story building, 83x83 feet.

Standard Reamer & Tool Co., Detroit, is building a new foundry, 50x100 feet.

Nicholson File Co., Providence, R. I., is building a one-story extension to its plant.

Michigan Grey Iron Castings Co., Detroit, is building a one-story addition, to cost $40,000.

Excelsior Tool & Machine Co., East St. Louis, Ill., is building a foundry addition, 110x118 feet.

Nickel Plate Foundry Co., Cleveland, plans the erection of an extension to its foundry, 30x70 feet.

The Steel Co. of Canada, Ltd., Harvey Lane, Hamilton, Ont., is building a factory, to cost $300,000.

Republic Belting Co., 726 West Pratt street, Baltimore, Md., is building several extensions to its plant.

The Timken-Detroit Axle Co., Detroit, has awarded contract for an addition to its forge and die shops.

Upton Machine Co., St. Joseph, Mich., is building a one-story machine shop, 90x175 feet, to cost $75,000.

Campbell Wire Specialty Works, South Bend, Ind., is building a one-story plant, 65x165 feet, to cost $50,000.

Standard Nut & Bolt Co., Valley Falls, R. I., is building a one-story and basement addition, 60x80 feet.

Worcester Pressed Steel Co., Worcester, Mass., is planning for the erection of a two-story addition, to cost $25,000.

Park City Machinery Co., Bridgeport, Conn., is building a new plant. James E. Stone, Bridgeport, is the architect.

Elyria Enameled Products Co., Elyria, Ohio, has secured a site for its proposed two-story addition, 40x60 feet.

The Frasse Steel Co., Hartford, Conn., has awarded contract for the erection of a one-story addition, 35x100 feet.

Monarch Drop Forge Products Co., 351 Cleveland street, Detroit, is building a two-story extension, 50x80 feet.

American Tube & Stamping Co., Bridgeport, Conn., is building a one-story addition to its annealing plant, 46x160 feet.

Portland Oil Refining Co., Portland, Ind., is building a two-story refinery on a local site, estimated to cost $100,000.

Seneca Wire & Iron Co., Fostoria, Ohio, has completed plans for a one-story extension, 167x208 feet, to cost $100,000.

Naugatuck Chemical Co., Naugatuck, Conn., has awarded contract for the erection of a two-story building, 45x60 feet.

R. J. Colson and E. C. Gay, Biloxi, Miss., is building a new fertilizer plant, the initial equipment to cost about $50,000.

Hamilton Rubber Manufacturing Co., Trenton, N. J., has awarded contract for a two-story plant addition, 20x40 feet.

New York Edison Co., Irving place, New York City, is building a two-story electric station, 75x100 feet, to cost $150,000.

The C. A. Dunham Co., Fisher Building, Chicago, is building a two-story addition to its plant, 40x150 feet, to cost $150,000.

Lufkin Foundry & Machine Co., Lufkin, Tex., has had plans prepared for the erection of a one-story addition, 70x160 feet.

Miller Cornice & Roofing Co., Tacoma, Wash., is building a new one-story factory, 100x120 feet. Edward Miller is president.

Stearns Tire & Tube Co., 2100 Krenlin street, St. Louis, Mo., has completed plans for the erection of a two-story plant, 33x65 feet.

Transport Truck Co., Mount Pleasant, Mich., manufacturer of motor trucks, is planning to build a one-story addition, 90x240 feet.

The A. J. Deer Co., Hornell, N. Y., manufacturer of hardware products, is building a one-story extension to its plant, 35x60 feet.

Dominion Steel Foundry Co., Hamilton, Ont., is building an addition to its plant, to cost $30,000. A. W. Sherman is president.

The O'Neill Iron Works, 268 Perry street, Buffalo, manufacturer of sugar machinery, is building a two-story addition to its plant.

Contract has been awarded for an addition to the tool making room of the Risdom Manufacturing Co.'s plant at Naugatuck, Conn.

McAllister-Canton Corporation, 1001 Broad street, Newark, N. J., is building a two-story automobile service building, to cost $100,000.

The Charles H. Mills Foundry Co., 2443 West 21st Place, Chicago, is building a plant, 100x200 feet, at an estimated cost of $150,000.

Lake Erie Foundry Co., Buffalo, N. Y., manufacturer of iron and steel castings, has completed plans for a one-story addition, 35x82 feet.

Green Engineering Co., East Chicago, Ind., is building an extension to its machine shop, to cost $25,000. The structure will be 51x323 feet.

General American Tank Car Co., East Chicago, Ind., is building an addition to its brass foundry and a car repair shop, at a cost of $25,000.

Kaufman Beef Co., Union Stock Yards, Baltimore, Md., is building a three-story packing plant, 111x118 feet. Harry Kaufman is president.

Beacon Hill Corporation, New Bedford, Mass., has awarded contract for the erection of a five-story storage building, 100x120 feet, to cost $250,000.

Contract has been awarded by Joseph Ashton, Jr., Trenton, N. J., manufacturer of machinery and appliances, for a one-story warehouse, 100x140 feet.

Contract has been awarded to A. Wheeler, 13 Railway avenue, Moncton, N. B., by the Record Foundry & Machine Co., Ltd., for the erection of a foundry.

Plans have been completed by the Motor Repair & Manufacturing Co., 216 High avenue, Cleveland, for the erection of a one-story building, 60x80 feet.

The Norton Co., Worcester, Mass., has awarded contract for two four-story storage buildings, one 54x125 feet, and the other 40x141 feet. Estimated cost, $350,000.

McDermott Body Corporation, 123 Sixth street, Long Island City, N. Y., is building a one-story automobile body manufacturing plant, 100x150 feet, to cost $27,000.

Standard Oil Co. of New York, is building a garage and repair shop, to contain 75,000 square feet, at its plant in Cambridge, Mass. Estimated cost, $150,000.

Contract has been awarded by Elliott & Whitehall, Galt, Ont., to the Kennedy Bell Construction Co., Brantford, Ont., for the erection of a machine shop, to cost $25,000.

Champion Ignition Co., Flint, Mich., manufacturer of spark plugs and ignition equipment, has completed plans for a new power plant for works service, to cost $60,000.

Iten Biscuit Co., Omaha, Neb., is building a large electric power plant for factory service at its new plant in Memphis, Tenn. The entire plant will cost about $500,000.

Berliner Gramophone Co., 37 Belmont street, Montreal, Que., has awarded contract to the Atlas Construction Co., for the erection of a power house. Estimated cost, $100,000.

Smith Wheel Co., 100 North Geddes street, Syracuse, N. Y., has awarded contract to Dawson Brothers, Union Building, for a two-story addition, 60x70 feet, and 40x106 feet.

William Cabble Excelsior Wire Manufacturing Co., 88 Ainslee street, Brooklyn, N. Y., manufacturer of brass and copper wire cloth, is building a two-story addition to its plant.

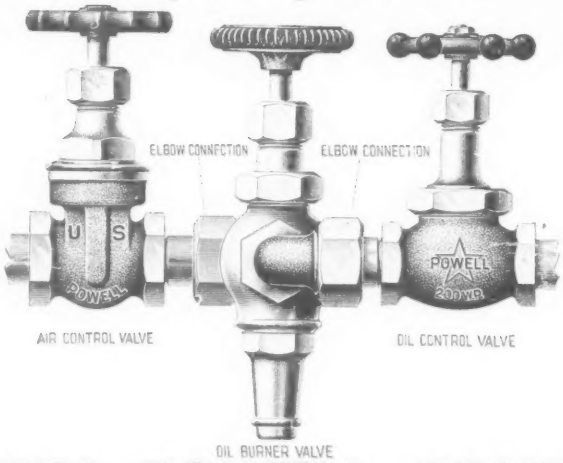
The Landis Machine Co., Waynesboro, Pa., manufacturer of threading machinery, machine tools, etc., has awarded contract for a one-story extension to its plant, 145x208 feet to cost $90,000.

POWELL Oil Burner VALVES

CRUDE OIL BURNING APPLIANCES

Complete Design of Unit

Used in many Industrial Plants, for economically handling, regulating and burning Crude Oil, in connection with Oil Furnaces.



Constructed to produce a maximum amount of heat with a minimum amount of oil and air. Can be use with Compressed Air, Fan blast or Steam.

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CINCINNATI, OHIO

Oil Burner circular sent on request.

Real Waterproof LEATHER-BELTING

Made of OIL TANNED leather. Put together with WATERPROOF Cement. The oil used in this tannage is insoluble in water.

Long Life Good Grip

Treat all belting with "BELTINE" Belt Dressing to get maximum life and power.

Jos. C. Paulus & Co.

Manufacturers

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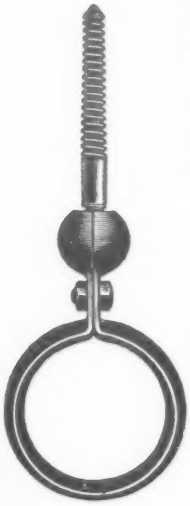
Our Specialties are sold to Jobbers only

Hanna "Ball Joint" Pipe Hanger

is the

Simplest and Strongest

hanger ever made.



¶Note the ball and socket joint.

¶Hanger can swing in any direction.

¶Not necessary to remove hanger to raise or lower pipe.

Write for "Our Silent Salesman"

The Penn Engineering Co.

Philadelphia, Pa.

Plamondon Manufacturing Co., 24 North Clinton street, Chicago, manufacturer of friction clutches and other power equipment, is building a two-story building, 60x100 feet, to cost $50,000.

St. Louis & San Francisco Railroad Co., St. Louis, Mo., has awarded contract to the Globe Construction Co., St. Louis, for new shops and an engine house at Oklahoma City, Okla., to cost $57,000.

Berbecker & Rowland Co., Waterbury, Conn., manufacturer of upholsterers' hardware, has awarded contract for a three-story and basement addition, 41x176 feet, to its plant, to cost $150,000.

United Machine & Manufacturing Co., Canton, Ohio, is building a gray iron and semisteel foundry, 100x200 feet. The company is planning to increase its capital stock from $150,000 to $500,000.

The Sheldon Axle & Spring Co., Conyngham avenue, Wilkes-Barre, Pa., manufacturer of automobile axles and springs, is building a one-story addition, 40x80 feet, for a heat-treating department.

Dominion Coal Co., Ltd., Union street, Morien, N. S., is building a boiler house, engine room and machine shop for two coal mines, to cost $200,000. M. J. McCann, Sydney, N. S., is purchasing agent.

The Frick Co., Waynesboro, Pa., manufacturer of agricultural implements, machinery and parts, has completed plans for the erection of a one-story foundry, 150x300 feet, and a two-story pattern shop, 80x100 feet.

Wildman Manufacturing Co., Norristown, Pa., manufacturer of machinery and parts, has awarded contract to the United Fireproofing Co., 8 West 40th street, New York City, for a one-story foundry addition, to cost $75,000.

Economy Baler Co., Ann Arbor, Mich., has awarded contract to Whitehead & Kales, Detroit, for a two-story steel and concrete warehouse and assembling building, 70x146 feet, to be followed by an assembling shop, 70x80 feet.

Harrolds Motor Car Co., 233 West 54th street, New York City, has awarded contract to the Burke Brothers Construction Co., 1483 Broadway, for its proposed new three-story service and repair works, 80x120 feet, to cost $60,000.

Transue-Williams Steel Forge Corporation, Alliance, Ohio, manufacturer of drop forgings and sheet steel stampings, has awarded contract to the H. K. Ferguson Co., Cleveland, for a one-story brick and steel foundry, 100x200 feet.

Westinghouse Electric & Manufacturing Co., Pittsburgh, Pa., has awarded contract to the Austin Co., Bulletin Building, Philadelphia, for a one-story addition to its plant at Essington, near Philadelphia, 120x200 feet, to be used as a foundry.

Frodich Brothers, Inc., 147 North Seventh street, Philadelphia, manufacturer of pipe, plumbing equipment and fittings, has awarded contract to Potts Brothers & Cooperson, 129 North Eleventh street, for a one-story building, 30x113 feet.

Milwaukee Reliance Boiler Works, Milwaukee, Wis., is building a brick and steel shop addition, 60x300 feet. It manufactures gas producers, hot water storage tanks and pneumatic pressure tanks. John E. Sharp is president and general manager.

The J. C. Whitlam Manufacturing Co., Wadsworth, Ohio, is building an addition to its plant, 40x70 feet, for storage of raw material. When completed, new machinery will be installed in the main plant in the space this addition will enable them to locate.

The F. Adams Electric Co., 2640 Windsor street, St. Louis, Mo., manufacturer of electrical products, has awarded contract to the McCormick-Combs Construction Co., Columbia Building, for a one-story addition, 147x190 feet, to cost about $150,000, including equipment.

The Walker & Pratt Co., 33 Union street, Boston, manufacturer of boilers for house heating, has awarded contract to the H. Nawn Construction Co., 82 Savin street, Roxbury, Mass., for a one-story foundry at its plant, Watertown, 200x230 feet, to cost $200,000, including equipment.

Fairmont & Cleveland Coal Co., Jacobs Building, Fairmont, W. Va., is planning for the erection of a new steel tipple, with shaker screens, at its Parker Run mine, near Rivesville, W. Va. W .E. Watson is president. The company recently increased its capital stock from $600,000 to $1,250,000.

Stinson Tractor Co., Minneapolis, Minn., is building a brick and frame addition to its main works at Superior, Wis., to provide increased capacity until the erection of a new plant at Eau Claire, Wis., can again be resumed. It was postponed on account of existing conditions. Joseph J. Ott, Eau Claire, is president.

Beaumont Iron Works, Beaumont, Texas, is building several additions to its plant, to cost $200,000, to include a main building, one-story, 40x170 feet, to be used as a foundry and pattern shop, and a three-story adjoining building for machine work and general service, with storage department. The company recently increased its capital stock from $225,000 to $700,000. L. J. Black is president.

NEW FACTORIES.

Jones Oil Engine Co., 227 Walton street, Syracuse, N. Y., is building a new plant, 90x260 feet.

Stockton Tractor Co. will erect a new plant at Sacramento, Calif., the main building to be 60x240 feet.

Universal Slag Brick & Tile Co., Gary, Ind., is building a modern plant at an estimated cost of $200,000.

Canadian Abrasive Co., Victoria, B. C., is building a new plant to cost $50,000. J. L. Near is interested in the project.

Pacific Box Co., Tacoma, Wash., is erecting a new plant, to cost $125,000. The mill will have a daily capacity of 75,000 feet of lumber.

Sanford Friction Thresher Co., Centralia, Wash., is building a new plant. The main building will be 40x100 feet, with a foundry, 40x60 feet.

Atlas Tractor Co., Detroit, has changed its name to the Adrian Tractor Co., and will move its plant to Adrian, Mich., where it is erecting a new plant.

The Sligh Furniture Co., Grand Rapids, Mich., is building a new plant in Olympia, Wash., to be used as a veneer factory. Estimated cost, $100,000.

Hamler Boiler & Tank Co., 3906 South Halsted street, Chicago, is building a new one-story plant at 65th street and Meade avenue. B. Kornfeldt is manager.

Cleveland Tire Mold, Foundry & Machine Co., Cleveland, is building a new branch plant on the Pacific Coast, a site having been secured at Sacramento, Calif.

Charles H. Mills Foundry Co., 2443 West 21st Place, Chicago, has purchased a block of land on which it will erect a new plant, 100x200 feet, to cost $150,000.

Tregoning Boat Co., Seattle, Wash., is building a sash and door factory in connection with its new plant for building small boats. Frank Tregoning is president.

United States Aluminum Co., 120 Broadway, New York City, has secured a site fronting on the Hudson River at Edgewater, N. J., to be used for the erection of a new plant.

A ten-acre site has been purchased at New Toronto, Ont., by the Lion Tire & Rubber Co., on which it proposes to erect a new plant. The company is capitalized at $2,500,000.

American Sugar Refining Co., 117 Wall street, New York City, is building a three-story mechanical shop, 50x150 feet, in the vicinity of its new plant at Baltimore, to cost $5,000,000.

Gloria Motors Corporation, 407 Shubert Building, Philadelphia, is building a new plant, the initial works to be two stories, 200x400 feet, estimated to cost $500,000, including equipment.

Columbia Rubber Mills, 175 Sixteenth street, Milwaukee, Wis., is building a new factory to be erected at Sheboygan. It will be 67x100 feet, and 70x100 feet, with a power house, 30x40 feet.

The Bour Refractories Co., Scranton, Pa., is building a new three-story plant, 90x200 feet, of reinforced concrete and steel construction. Approximate cost, including equipment, $200,000.

Ford Motor Co., Detroit, is having plans prepared for the erection of a new plant at Kansas City, Mo., to be used for the assembling of tractors. The initial works will cost about $500,000.

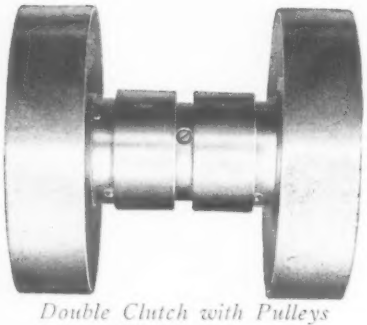
Milford Shipbuilding Co., Milford, Conn., recently incorporated with a capital stock of $100,000, has purchased a twenty-two-acre site on the Housatonic River and will erect a new plant.

Carroll Castings Co., East Chicago, Ind., recently organized with a capital stock of $250,000, has acquired property fronting on the Indiana Harbor Belt Railway, for the erection of its new plant.

General Drop Forging Corporation, Detroit, is building a new plant, the first unit to be two stories, 65x210 feet, of brick and reinforced concrete. J. D. Edwards, 54 Lafayette Boulevard, is manager.

Plans have been completed by the Tacoma Manufacturing & Specialty Co., Tacoma, Wash., for the erection of a plant for the manufacture of doctor and dental supplies. C. F. Hunter is vice-president.

THE JOHNSON FRICTION CLUTCH



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When Your Customer Asks for Johnson Clutches—

you should be fully informed, so that you can give him the full service his trade deserves. It is poor business to risk sacrificing his confidence by "working off" an inferior clutch—just because you are not posted on the Johnson

The reputation of Johnson Clutches is broad and well founded—based on twenty years of extensive advertising and careful maintainence of quality. Every industry knows Johnson Clutches for what they are—the highest grade clutch in the field.

When your customer asks for Johnson Clutches, be ready for him. Write today for full literature and dealers' discount.

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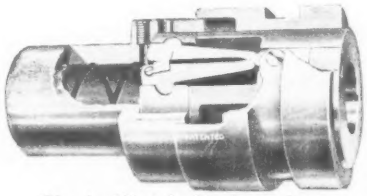

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THE CARLYLE JOHNSON MACHINE CO. MANCHESTER CONN.

ROSE VALLEY SHOPS

¶ We have repeatedly set forth that our policy is to give *complete satisfaction* to our trade.

¶ We know we can do this only by consistently maintaining the highest standard of quality and service.

ROSE VALLEY · LEATHER BELTING

ROSE VALLEY SHOPS *Manufacturers of Leather Belting*

MOYLAN-ROSE VALLEY, Delaware County,

PENNSYLVANIA

Springfield Automatic Machine Co., Fitchburg, Mass., has acquired a four-acre site at West Springfield, Mass., as a site for a new plant, to cost about $200,000. Isaac T. McGregor is treasurer.

American Forge Co., 2503 Blue Island avenue, Chicago, is building a new plant, at a cost of $300,000, to consist of five buildings, as follows: two, 40x80 feet; 65x120 feet; 30x80 feet, and 20x40 feet.

United States Compression Inner Tube Tire Co., Tulsa, Okla., is building a new plant at Burbank, Calif., where it has acquired a twelve-acre site. M. C. Hale is president, and A. J. Pennington, general superintendent.

Tuscora Rubber Co., City Bank Building, Wheeling, W. Va., capitalized at $2,500,000, is building a new plant at New Philadelphia, Ohio, for the manufacture of mechanical rubber products, including tubing and industrial hose.

The J. F. Stokes Machine Co., Philadelphia, manufacturer of chemical machinery and parts, has completed plans for the erection of a new plant at Cedar Grove, near Philadelphia, 140x300 feet, and 90x160 feet. F. J. Stokes is president, and R. M. Truitt, secretary and treasurer.

Pride Pulp & Paper Co., Tomahawk, Wis., has completed plans for its proposed paper and pulp mill, to cost approximately $3,000,000, including equipment. The first unit will contain three machines with a capacity of 75 tons of catalog book paper daily. C. B. Pride is president and general manager.

The Ford Roofing Products Co., Vandalia, Ill., is building a new $1,000,000 mill, and will install considerable new machinery, including reduction gears. The mill is being built under the supervision of Louis M. Ford, vice-president; John M. Jack, vice-president of production and A. Seelig, consulting engineer.

Plans have been prepared by the Wheeling Steel Corporation, Wheeling, W. Va., for a new branch plant at Kansas City, Mo., for its Whitaker-Glessner division. The building will be five stories and basement, of brick and reinforced concrete construction, and will be used as a fabricating plant for the manufacture of tanks and galvanized culverts.

The Morgan Manufacturing Co., Philadelphia, recently organized with a capital stock of $3,000,000, to manufacture automobiles and parts, has acquired a site at Chester, Pa., for its proposed new plant. James L. Morgan, Overbrook, Pa., formerly connected with the Adair-Heyl Motors Co., Philadelphia, is president, and Harry C. Robinson, Chester, secretary and treasurer.

INCREASED CAPITAL

Indestructible Steel Co., Lebanon, Ind., announces an increase in capital stock to $300,000.

Columbia Iron Works, Columbia, Ind., has increased its capital stock from $75,000 to $125,000.

Peoria Machine & Supply Co., Peoria, Ill., has increased its capital stock from $15,000 to $50,000.

The capital stock of the McNeil Boiler Co., Akron, Ohio, has been increased from $10,000 to $500,000.

Pangborn Corporation, Hagerstown, Md., has increased its capital stock from $260,000 to $1,060,000.

Indiana Motor Co., Indianapolis, Ind., announces an increase in capital stock from $100,000 to $250,000.

The capital stock of the Muskogee Iron Works, Muskogee, Okla., has been increased from $50,000 to $100,000.

New Haven Hardware Specialty Co., New Haven, Conn., has increased its capital stock from $20,000 to $100,000.

Kokomo Malleable Iron Co., Kokomo, Ind., announces an increase in capital stock from $350,000 to $500,000.

Van Briggle Motor Device Co., Indianapolis, Ind., announces an increase in capital stock from $500,000 to $800,000.

Powelson Foundry & Machine Co., New York City, announces an increase in capital stock from $200,000 to $750,000.

United States Automotive Co., Connersville, Ind., has increased its capital stock from $30,000,000 to $40,000,000.

Albany Motors, Inc., Albany, N. Y., manufacturer of motor parts, has increased its capital stock from $25,000 to $100,000.

The capital stock of the Boykin Machinery & Supply Co., Beaumont, Texas, has been increased from $100,000 to $500,000.

The capital stock of the Drapery Hardware Manufacturing Co., Brooklyn, N. Y., has been increased from $25,000 to $100,000.

The capital stock of the Columbian Enameling & Stamping Co., Terre Haute, Ind., has been increased from $1,000,000 to $2,500,000.

Texas & Pacific Coal & Oil Co., Thurber, Texas, has increased its capital stock from $6,000,000 to $8,120,000, and plans to build a large refinery.

Ohio Valley Casket Manufacturing Co., Lawrenceburg, Ind., has increased its capital stock by $25,000, for the purpose of enlarging its plant.

Announcement is made by the Billings & Spencer Co., Hartford, Conn., of an increase in capital stock of $750,000, to provide for expansion.

The capital stock of the Aluminum Goods Manufacturing Co., 520 Belmont avenue, Newark, N. J., has been increased from $750,000 to $1,200,000.

Gramm-Bernstein Motor Truck Co., Lima, Ohio, has increased its capital stock from $1,500,000 to $5,000,000, the entire amount to be issued as common stock.

Jackson Cushion Spring Co., Jackson, Mich., has changed its name to the Reynolds Spring Co., and has increased its capital from $6,000,000 to $24,000,000.

American Sanitary Works, Washington, N. J., manufacturer of plumbers' tanks and supplies, announces an increase in capital stock from $200,000 to $350,000.

The capital stock of Homer D. Bronson Co., Beacon Falls, Conn., manufacturer of brass and bronze products, has been increased from $100,000 to $150,000.

General Machine & Tool Co., Jackson, Mich., has increased its capital stock from $24,000 to $100,000, and is having plans prepared for an extension to its plant.

The capital stock of the Prospect Tire & Rubber Co., Buffalo, N. Y., manufacturer of automobile tires and rubber goods, has been increased from $500,000 to $1,000,000.

Globe Metal Products Co., Sheboygan, Wis., has increased its capital stock from $200,000 to $300,000. The company is planning extensive additions and improvements to its plant.

Joseph Stokes Rubber Co., Trenton, N. J., manufacturer of mechanical rubber products, has increased its capital stock from $300,000 to $3,050,000. Charles E. Stokes is president.

New Britain Machine Co., New Britain, Conn., has increased its capital stock to $6,000,000, an increase of $1,000,000 in the common and the same amount in the preferred stock.

The capital stock of the Corona Typewriter Co., 129 West 42d street, New York City, with plant at Groton, N. Y., has increased its capital stock from $2,500,000 to $4,000,000.

The capital stock of the Morris Metal Products Co., Bridgeport, Conn., formerly the Liberty Ordnance Co., has been increased from $4,000,000 to $8,000,000 to provide for expansion.

Dayton Pump & Manufacturing Co., Dayton, Ohio, will increase its capital stock from $1,300,000 to $1,500,000. The company is completing several buildings now under construction.

The capital stock of the Rockford Union Foundry Co., 1129 River street, Rockford, Ill., J. P. Lundell, president, has been increased from $25,000 to $40,000, to provide for increased business.

Modern Grinder Manufacturing Co., Milwaukee, Wis., has increased its capital stock from $25,000 to $100,000. The company is planning to build a new machine shop and make other improvements.

The A. H. Petersen Manufacturing Co., Milwaukee, Wis., manufacturer of special machinery, tools and gages, has increased its capital from $50,000 to $150,000. New equipment is being installed.

Waukesha Motor Co., Waukesha, Wis., manufacturer of heavy-duty gas engines for motor trucks and tractors, has increased its capital stock from $1,000,000 to $2,000,000. Harry L. Horning is president.

The St. Clair Manufacturing Co., North St. Clair street, Dayton, Ohio, manufacturer of acetylene generators, has increased its capital stock from $15,000 to $150,000, the increase to be used for expansion purposes.

Wetmore Reamer Co., Milwaukee, Wis., has increased its capital stock from $75,000 to $250,000, and has moved into its new plant on 27th street, near Clybourn. Paul W. Rogers is president and general manager.

The capital stock of the James Leffel Co., Springfield, Ohio, manufacturer of turbine water wheels, engines and boilers, has been increased from $750,000 to $1,750,000, the increase to be used for expansion of its business.

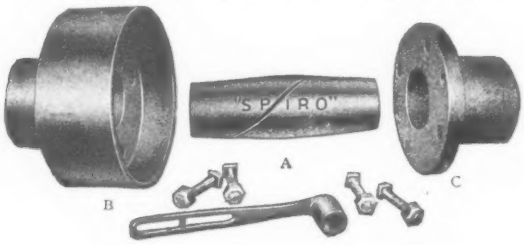
Wells Bros. of Canada, Ltd., Galt, Ont., manufacturer of taps, dies and screw plates, has increased its capital stock from $40,000 to $250,000, and changed its name to that of the Greenfield Tap & Die Corporation of Canada, Ltd.

Bond

TRADE MARK B D-S REGISTERED BOND DOUBLE-SURE QUALITY

The User demands Quality.
The Dealer demands Reputation.
Bond Power Transmission has both.

The SPIRO Coupling, one of the Bond Transmission Specialties. Ask for Catalog 38 M S, showing the full line



BOND FOUNDRY & MACHINE CO.

Manheim, Lancaster Co., Pa.

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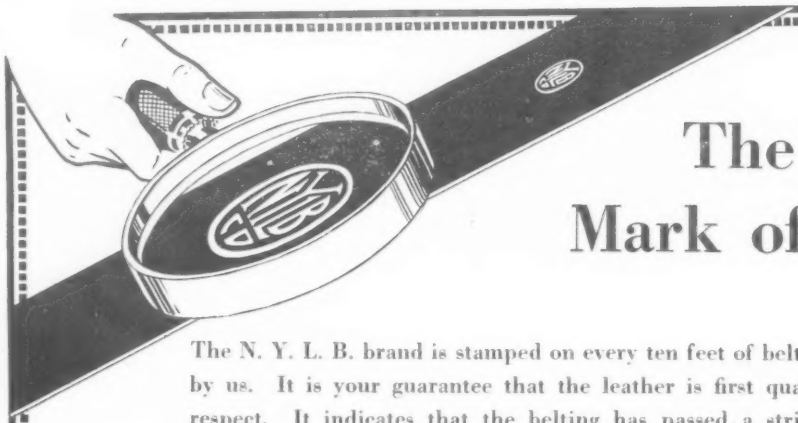
Christiana Machine Company, Christiana, Pa.
J. & G. Rich Company, Philadelphia, Pa.
Bond Engineering Works, Limited, Toronto, Canada



The Quality Mark of Belting

The N. Y. L. B. brand is stamped on every ten feet of belting produced by us. It is your guarantee that the leather is first quality in every respect. It indicates that the belting has passed a strict inspection and, when used under proper mechanical conditions, will deliver its full quota of power.

NEW YORK LEATHER BELTING CO.

428-430 Broadway, New York, U. S. A.

Chicago Branch: 34 So. Jefferson St.

The capital stock of the Romort Manufacturing Co., Oakfield, Wis., has been increased from $50,000 to $150,000, to provide for increased business. The company manufactures combination air and water systems for garages. F. E. Willard is secretary.

Adams Machinery & Manufacturing Co., Mobile, Ala., has increased its capital stock from $30,000 to $130,000, and changed its name to the Adams Motor Co. The company is planning the erection of a new automobile service building and repair works. L. G. Adams is manager.

NEW INCORPORATIONS.

Bailey-Drummond Motor Co., Ltd., Toronto, Ont., $100,000, by Roy K. Logan; Robert Wherry, 157 Bay street; Wendell H. Osborne, 2 Russell street.

The G. C. Winter Co., Southbridge, Mass., $100,000, to manufacture hardware and tools. Incorporators: P. Winter, Maurice A. Taylor and N. C. White.

Steib-Tahuian Co., Irvington, N. J., $100,000, to manufacture tin and other metal products. Incorporators: J. G. Steib, Adam Meister and J. R. Tahuian.

Newark Hardware & Repair Co., 147 Mulberry street, Newark, N. J., has recently been incorporated, with David Meyers, 123 Hillside avenue, as manager.

The L. O. Beard Machine Co., Lancaster, Pa., $25,000, to manufacture machinery and parts. Incorporators include L. O. Beard and Walter C. DeMaris.

Wall Pump & Compressor Co., Quincy, Ill., $200,000. George Wall, formerly secretary of the Gardner Governor Co., Quincy, is president of the new company.

Stronghold Belting Co., Indianapolis, Ind., $250,000, to manufacture leather belting. The directors are Charles S. Rauh, H. R. Gusdorf and H. M. Gusdorf.

American Acme Agricultural Accessories Co., 3023 Abell avenue, Baltimore, Md., $50,000, by William H. Eisenhart, George R. Sinnickson and Charles J. Ziegler.

The H. A. Gable Co., Harrisburg, Pa., $300,000, to manufacture hardware and kindred products. Incorporators: G. C. Golling, Harper W. Spong and E. L. Cowden.

Toronto Computing Scale Co., Ltd., Toronto, Ont., $200,000, by James Parker, 157 Bay street; Mortimer S. Hooper and Maurice Crabtree, 575 Ossington avenue.

Jensen, Ltd., Montreal, $125,000, to manufacture machinery, tools, dies and castings. Incorporators: Alexander G. Yeoman, Herbert W. Jackson and Michael J. O'Brien.

Adcock & Brewer, Ltd., Montreal, Quebec, $24,000, to manufacture hardware, machinery and tools. Incorporators: S. H. R. Bush, Louis P. Crepeau and Maurice Dugas.

Superheater Co., Ltd., Toronto, Ont., $1,000,000, by Archibald W. Langmuir, 801 Dominion Bank Building; Morely Smith and George M. Huycke, 143 Bloor street, West.

Lincoln Metal Products Co., 82 Pearl street, Hartford, Conn., has been organized to manufacture metal goods. A. W. LeBoeuf is president and F. I. Davis secretary and treasurer.

The Vaporetor Corporation of Milwaukee, Wis., $300,000, to manufacture gas engine devices and parts. Incorporators include N. W. Klein, Thomas T. Churchill and James Barels.

Harris Packless Valve Co., Springfield, Ohio, has been granted a Massachusetts charter. George W. Harris, president; Charles L. Young, treasurer, and Willis E. Maynard, secretary.

Perfection Magneto Repair Co., Ridgewood, N. J., $50,000, to manufacture magnetos and ignition equipment. Incorporators include Harry and Andrew King, and Richard Wiseman.

Siphon-Valve Flush Co., Allentown, Pa., has been organized by Charles L. Lehnert, Catasaqua, and Joseph P. Seeds of Allentown, to manufacture valves, flush tanks and other specialties.

Nelson Pulley Co., Milwaukee, Wis., $25,000, to operate and maintain machine shops, foundries and pattern shops. Incorporators: F. J. Jennings, Joseph E. Tierney and Harold J. Ross.

American Power Appliance Co., New York City, $500,000, to manufacture engines, machinery and parts. Incorporators: G. A. Senior, J. F. Brandenburg and F. C. Briggs, 68 Montague street, Brooklyn.

Page-Hersey Tubes, Ltd., Toronto, Ont., $4,300,000, to manufacture machinery and implements. Incorporators: Leo W. Goetz, John Sutherland and Donald P. Guthrie, all of Guelph, Ontario.

The C. A. Bruhns-Stewart-Widder Corporation, New York City, $50,000, to manufacture hardware products. Incorporators: J. A. Stewart, J. L. Widder, 226 West 36th street, and C. A. Bruhns.

The E. G. Wentworth Manufacturing Co., Indianapolis, Ind., $100,000, to manufacture automatic light controllers. The directors are E. G. Wentworth, Charles O. Wentworth and M. W. Wentworth.

The Roberts Manufacturing Co., Atlantic City, N. J., $125,000, to manufacture heating appliances and other metal products. Incorporators: George A. Evans, L. B. Roberts and Frederick J. Friez.

The Bearings Co. of New England, Inc., Boston, Mass., $10,000, to operate a general foundry and machine shop. Incorporators include Henry L. Bilodeau, James G. Fegan and F. W. Doring.

Northern Manufacturing Co., New Haven, Conn., $50,000, to manufacture machinery and parts, and hardware products. Incorporators: J. T. Hines, C. O. Beck and John Hugo, 296 Central avenue.

Wisconsin Re-Grinding Co., Sheboygan Falls, Wis., $5,000, to establish a machine shop equipped for renewing gas engine cylinders. Incorporators include A. P. Schneiderwind and William Findlay.

Turbigas Motors Co., New York City, has been incorporated to manufacture internal combustion engines and parts. Incorporators include R. R. Reynolds and A. Moehringer, 8 Marcy avenue, Brooklyn.

Aylmer Products, Ltd., Aylmer, Ont., $500,000, to manufacture scales, machinery and pumps. Incorporators: Edwin Smily, 87 Gloucester street; Davis I. Grant, Bank of Hamilton Building, and James S. Bell.

Vermont Tap & Die Corporation, Newport, Vt., has been incorporated with the following officers: P. O. Miller, president; H. E. Paine, vice-president and general manager; B. W. Wilcox, treasurer.

Economy Supply & Equipment Co., Atlantic City, N. J., $50,000, to manufacture heating equipment. Incorporators: Gifford E. Dobbs, 12 North Sacramento avenue; Raymond R. Gibson and John G. Gibson.

Lange Boiler Co., Elyria, Ohio, $100,000. Incorporators include J. A. Lucas, Elyria, and H. J. Lange, Lorain. The company contemplates the erection of a plant for the manufacture of steam and hot water boilers.

Holm Radiator Corporation, Milwaukee, Wis., $50,000, to repair and manufacture automobile truck and tractor radiators. Incorporators: Harry H. Holm, 283 Third street; W. V. Simmons and Fred W. Krueck.

International Packing & Supply Co., Inc., 15-17 South Gay street, Baltimore, Md., $10,000, to install packing and engine room supplies for ships. Incorporators: Gerhard Boe, John A. Knight and Frank R. Pendleton.

The Jentil Cleaning, Derusting & Protecting Co., Ltd., Montreal, Quebec, $125,000, to manufacture machinery, motors and appliances. Incorporators: Francis G. Bush, Frank B. Common and George A. Coughlan.

International Combustion Engineering Corporation, Hastings-on-Hudson, N. Y., $10,000,000. Incorporators: George H. Hansell, Cranford, N. J.; Mitchell P. Talmage, Hastings-on-Hudson, and George H. Loarne, New York City.

Seamless Hex-Tube Radiator Co., 1141 Los Angeles street, Los Angeles, Calif., has been organized to manufacture automobile radiators and other metal products. John W. Field, Third and Figueroa street, is manager.

The Lucey Manufacturing Co., Woolworth Building, New York City, manufacturer of oil well machinery, pumps and engines, with plants at Chattanooga, Tenn., and Houston, Texas, has been reorganized with an active capital stock of $3,988,650.

A. C. Spark Plug Co., Ltd., Brantford, Ont., $10,000, to manufacture automobile accessories and supplies. Incorporators: Robert H. Mulch, Henry Harris and William A. Coad. The company has awarded contracts for the erection of a new plant.

Belanger Foundry, Ltd., Montreal, Quebec, $100,000, to carry on the business of manufacturers of machinery and tools. Incorporators: Auguste Jean, Ovide D'Amour and Ulric Genest. The company has taken over the plant and business of the firm of O. Belanger, Enregistree.

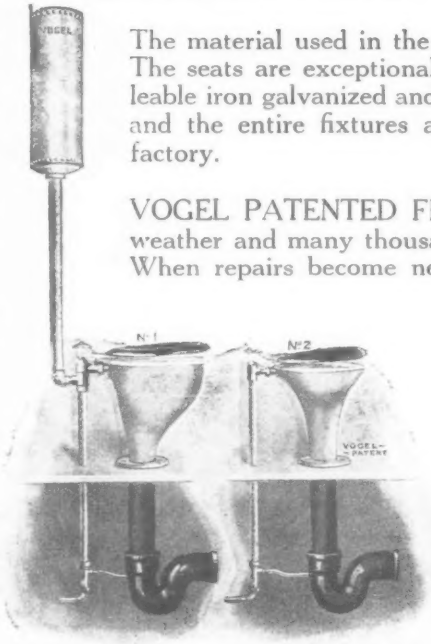
GENERAL NEWS

New York Supply & Machinery Co. has moved into its new building at 946 West 33d street, Chicago.

Bergougnan Rubber Corporation, Trenton, N. J., recently absorbed the Delion Tire & Rubber Co., 2000 East State street, Trenton.

VOGEL Patented Frost-Proof Closets

give satisfactory service, day in and day out, winter and summer



The material used in the manufacture of VOGEL closets is the best to be obtained. The seats are exceptionally strong and durable, the operating levers are of malleable iron galvanized and will not break, the valve bodies are of good quality brass, and the entire fixtures are tested under hydraulic pressure before leaving our factory.

VOGEL PATENTED FROST-PROOF CLOSETS have stood the test of zero weather and many thousands have been in use for years without requiring repairs. When repairs become necessary, merely remove one valve cap in back of the bowl and the rod with operating parts may be removed in an instant.

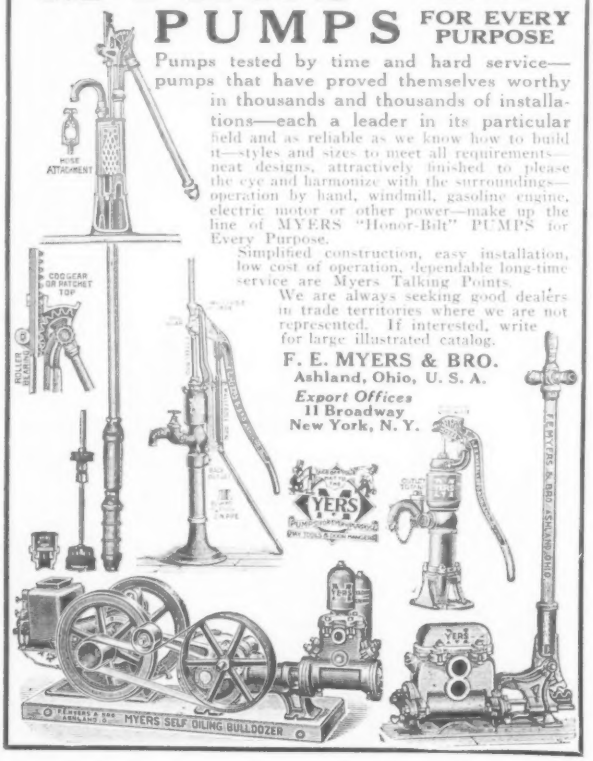
The VOGEL is the simplest and most durable frost-proof water closet made. The price is right.

SOLD BY ALL JOBBERS

JOS. A. VOGEL COMPANY

Wilmington, Delaware

MYERS HONOR-BILT PUMPS FOR EVERY PURPOSE



Pumps tested by time and hard service—pumps that have proved themselves worthy in thousands and thousands of installations—each a leader in its particular field and as reliable as we know how to build it—styles and sizes to meet all requirements—neat designs, attractively finished to please the eye and harmonize with the surroundings—operation by hand, windmill, gasoline engine, electric motor or other power—make up the line of MYERS "Honor-Bilt" PUMPS for Every Purpose.

Simplified construction, easy installation, low cost of operation, dependable long-time service are Myers Talking Points.

We are always seeking good dealers in trade territories where we are not represented. If interested, write for large illustrated catalog.

F. E. MYERS & BRO.
Ashland, Ohio, U. S. A.
Export Offices
11 Broadway
New York, N. Y.

This doesn't look much like the ordinary Shaft-Coupling, does it?

No, Sir! —It's absolutely DIFFERENT in the way it eliminates

1. Bolts and nuts with their dangerous projecting ends.
2. Keys and key-ways which cost time and money.

The "BULL DOG" Coupling without a Bolt

The beauty about this coupling is its simplicity.

Install it with your bare hands.

With the sight-hole at top, slip it over one end of the shaft.

Insert the end of other shaft until the two meet at the sight-hole.

—then turn on your power. That's all. Time, 5 minutes. How does it work?

Simply two sets of rollers in eccentric chambers. Nothing to lose, break or get out of order.

Try the Bull Dog Coupling or Collar at our RISK.

The collar without a set screw.

SAFETY FIRST MANUFACTURING CO.

ALEXANDRIA, VA.

Worcester Abrasive Co., Worcester, Mass., has moved its executive offices to 1662 Broadway, New York City.

The Pittsburgh district sales offices of the American Chain Co. have been moved from the Bowman Building to 644 Union Arcade Building.

The Graham Roller Bearing Co., Coudersport, Pa., has been taken over by the Graham Roller Bearing Corporation, and a new organization is being formed.

Federal Sales Corporation has secured the exclusive sales agency in the Pittsburgh district for the products of the Misener Rotary Hack Saw Co., Syracuse, N. Y.

The Jackson Cushion Spring Co., Jackson, Mich., will change its name to the Reynolds Spring Co. Wiley R. Reynolds, Jackson, has been made president, following a reorganization.

The Chicago Solder Co., formerly located at 218 North Union street, Chicago, announces the removal of its offices and factory to its new building at Wrightwood, Keeler and Tripp avenues, Chicago.

Mundie Manufacturing Co., Peru, Ill., represents a merger of the H. B. Compressor & Pump Co., Chicago, the Wells Manufacturing Co., Mendota, Ill., and the Brunner Foundry & Machinery Co., Peru, Ill

The export department of the Oxweld Acetylenne Co., which was formerly at the company's factory at Newark, N. J., has been removed to the Carbide & Carbon Building, 30 East 42d street, New York City, and is under the direction of R. G. Noble.

National Twist Drill & Tool Co., Detroit, manufacturer of twist drills and reamers, formerly at 30 Church street, New York City, has moved into its store at 73 Warren street, New York City. This branch is in charge of V. G. Engleman, formerly of Detroit.

Oxweld Acetylene Co. has established Pacific Coast sales and distributing headquarters at San Francisco with offices at 1077 Mission street. Leo Romney is sales manager, with headquarters at San Francisco. The territory embraces Oregon, Washington, Utah, California, Arizona, Nevada and the counties of Sweetwater, Lincoln and Uintah in Wyoming.

A merger has been effected between the American Sanitary Works, Washington, N. J., and the Bellmark Co., Trenton, N. J. The company will hereafter be known as the B. O. T. Manufacturing Co., with offices and showroom at Trenton. The officers of the company are B. O. Tilden, president; H. A. Mayo, vice-president and assistant treasurer, and H. W. Keen, treasurer.

The Wooster Sanitary Co., with plants at Clarksburg, W. Va., and Fredericksburgh, Ohio, has been consolidated with the National Sanitary Co., of Salem, Ohio. The general offices of the National Sanitary Co. will be at Salem. The officers of the new organization are Fred H. Snyder, president; F. W. Bell, first vice-president and general manager; J. Frederick Coxon, second vice-president; A. P. Harrison, treasurer, and R. A. Lamont, Jr., secretary.

The Michigan Metal Supply Co., 66 West Larned street, Detroit, has changed its name to the E. H. Welker Co., Inc. The company handles the products of the following concerns: LeMoyne Steel Co., Pittsburgh; Eagle Bolt & Forging Co., Cleveland; Rickert-Shafter Co., Erie, Pa.; Steel Furniture Co., Grand Rapids, Mich.; American Hammered Piston Ring Co., Baltimore, Md.; Sheffield Machine & Tool Co., Dayton, Ohio, and the Monarch Engineering Co., Dayton, Ohio.

The Uehling Instrument Co., 71 Broadway, New York City, manufacturer of fuel economy equipment, announces that it is now being represented in the New England states by the Smith Engineering & Supply Co., 89 State street, Boston, Mass., manufacturers' agents and engineers, specializing in power plant equipment. S. W. Smith, president of the latter company, was until very recently associated with the Uehling Instrument Co., with headquarters in their New York office.

The Millers Falls Co., Millers Falls, Conn., has purchased the plant of the West Haven Manufacturing Co., West Haven, Conn., which manufactures Universal and other brands of hack saws, band saws and small tools. The acquisition of the plant allows the Millers Falls Co. to add hack saws to its line of hack saw frames and power hack saw machines. The Millers Falls Co. will continue the manufacture of Universal saws, but will also make at the West Haven plant both hand and power hack saws under the Millers Falls brand.

The Detroit Valve & Fittings and the Detroit Brass Works, Detroit, will hereafter be known as the Detroit Brass & Malleable Co. It was deemed advisable to combine the names of the two companies for a certain period of time so not to lose the identity of either plant. The name of the company was considered too lengthy, so now that the trade is thoroughly acquainted with both branches and their respective products, the company has decided on a more compact name. There is no change in policy or management and the same personnel will be retained.

CLASSIFIED ADVERTISEMENTS

Classified Line Advertisements under heads of Wanted, For Sale, etc., will be published in this Department at a rate of 25 cents a line, each insertion. Count nine words to a line.

SALESMEN WANTED

WANTED—Experienced mill supply salesman, for Newark, N. J., and vicinity. Address William S. Roe, 15-31 River street, Newark, N. J. 8-9

WANTED—Salesmen with experience in mill supplies for Pennsylvania territory. State experience and salary expected. Address No. 648, Care MILL SUPPLIES, 537 S. Dearborn Street, Chicago. —12

WANTED—Salesmen and jobbers to handle our line of factory reversible bench brushes. Can be handled as a side line on commission basis. Address The Torrington Brush Works, Torrington, Conn.

WANTED—Salesman and jobbers to handle our turret attachments for lathes and drill presses; also adjustable light brackets. Big demand. Easy sales. Address Newman Manufacturing Co., Cincinnati, Ohio. 3-5

TRANSMISSION MANAGER WANTED

WANTED—Mill supply house in Newark, N. J., wants experienced manager for transmission department, capable of figuring on erection work and superintending. Address No. 651, care MILL SUPPLIES, 537 So. Dearborn St., Chicago.

SYSTEMATIZE YOUR STOCK BINS

Bin label cards for Ford auto parts, sheet metal card holders, transparent celluloid card covers, bin markers and stock record cards for mill, hardware, auto and plumbing supplies. Send for samples and prices, and for booklet, "How To Systematize The Stock Room." Haddon Bin Label Co., Haddon Heights, N. J. 8-12

WELL KNOWN PRODUCTIVE SALES ORGANIZATION

With successful record for the past number of years, acquainted with personnel of machine shops, foundries, factories, etc., will consider acting as exclusive agents for manufacturer or inventor of merited specialty. Have sixteen hustling salesmen covering all parts of United States. Can furnish satisfactory references as to financial standing. Address No. 646, care MILL SUPPLIES, 537 S. Dearborn St., Chicago. —11—

SEWAGE DISPOSAL SYSTEM

Sewage disposal outside sewer district. With or without water works. Use Russell Systems. Address Russell Sewage Disposal Co., Burlington, Iowa.

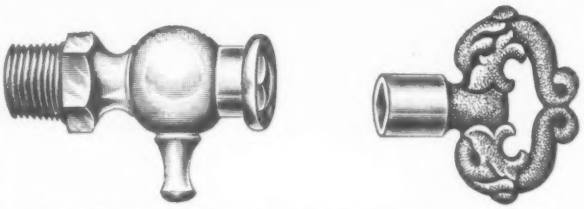
SITUATIONS WANTED

MR. MANUFACTURER—Are you getting satisfactory representation in New England and New York states? If not, make me a proposition. Have had fifteen years experience selling to hardware, mill supply houses, factories and all industrial organizations in above territory. Twelve years present position. Large following among these trades. Address No. 649, Care MILL SUPPLIES, 537 S. Dearborn Street, Chicago.

SALESMAN—POWER TRANSMISSION MACHINERY

Live energetic expert of proved ability desires change. Fifteen years experience, twelve years present position, established trade and large following New England and New York states. Salary and commission. Address No. 650, Care MILL SUPPLIES, 537 S. Dearborn St., Chicago.

McCAULEY BELTING COMPANY
LEATHER BELTING
412-420 ORLEANS STREET, CHICAGO, ILL.



Our Line is the recognized standard on

Air Cocks
Air Valves
Cylinder Cocks
Gauge Cocks
Water Gauges
Priming Cocks

Write for Catalog

The
STERLING & SKINNER MFG. CO.
DETROIT, MICH.

WHEN YOU NEED GATE VALVES ORDER WILLIAMS.

IT'S as much to your interest to ***sell*** Williams Gate Valves as it is to the engineer to ***use*** them.

You benefit in increased profit, also the good will of the engineer—who, in turn, secures better valve value, greater economy and higher efficiency at less cost.

Whenever the Williams is compared with other Valves, in point of quality, construction and durability—its superiority is quickly emphasized and here are some of the reasons why:

The Williams is heavier than other Gate Valves and it's guaranteed for 200 lbs. pressure. It's strong and substantial—that's why it is not affected by the strains of expansion or contraction or sagging of pipe lines.

It has two discs and seats, a double protection against leakage, and it will take pressure from either side.

Like all other Williams Valves, it can be safely repacked under pressure

In short, the Williams is a GOOD Gate Valve—good for the user and very good for the dealer.

Send us a stock order—small or large, and we'll do the rest toward making your valve trade more profitable.

The D. T. Williams Valve Company
CINCINNATI OHIO

The Right Belt in the Right Place Saves Coal

Don't permit your belting to be bought by rule-of-thumb methods; for belt selection deserves your best thought.

As your power bill varies in proportion to the efficiency of your belting—you will save coal or other fuel by purchasing the right belt.

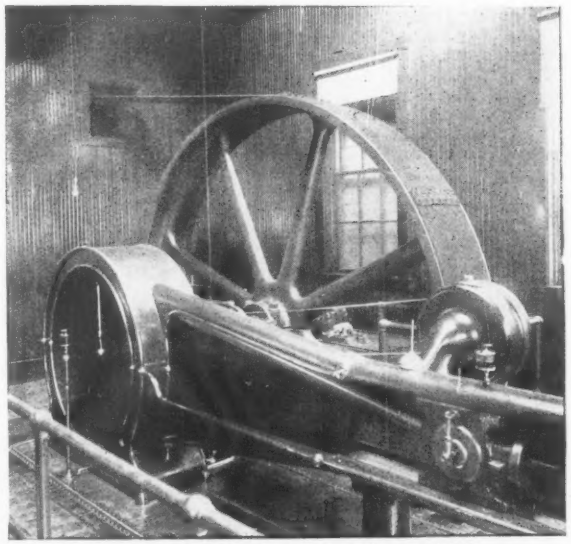
Make a comparative test of "Camel Hair" Belting on your most difficult drive. Select a drive subject to sudden overloads and severe shocks.

We'll guarantee your machinery won't drop speed from belt "creep" or that "Camel Hair" Belting won't burn from slippage.

Many belt users report 25% more power with less tension than leather belts, because "Camel Hair" Belting combines great strength with light weight.

The Rossendale-Reddaway BELTING AND HOSE COMPANY, NEWARK, N.J.

Also makers of solid woven and canvas stitched beltings



IN USE 17 YEARS AND STILL AS GOOD AS NEW
Since 1903 this 20 inch 60 foot double "Camel Hair" Belt has been transmitting 150 horsepower in a large tannery in Massachusetts, and after 17 years of constant use shows no sign of the strain it has been under.

READY REFERENCE FOR BUYERS

Classified List of the Products of Advertisers

*Member American Supply & Machinery Manufacturers' Association.
For Location of Advertisements see Alphabetical Index to Advertisers.

ACCESSORIES, AUTOMOBILE
Breeze Manufacturing Co.
Detroit Brass & Malleable Works.
Dominion Asbestos & Rubber Corp.
Empire Tire & Rubber Corp.
The Lunkenheimer Co.
General Asbestos & Rubber Co.
*Michigan Lubricator Co.
The National Tire & Rubber Co.
*The Wm. Powell Co.
The Russell Mfg. Co.

APRONS, LEATHER
*Chicago Belting Co.
*Chicago Rawhide Mfg. Co.

ARBORS
*Detroit Twist Drill Co.

ASBESTOS MATERIALS
Dominion Asbestos & Rubber Corp.
*General Asbestos & Rubber Co.
The Russell Mfg. Co.

AUTO SPECIALTIES
Breeze Manufacturing Co.
Dominion Asbestos & Rubber Corp.

BABBITT METALS
*Dodge Sales & Engineering Co.
*W. A. Jones Foundry & Machine Co.
*Lumen Bearing Co.
*Medart Patent Pulley Co.

BARRELS, STEEL SHIPPING
Wm. B. Scaife & Sons Co.

BARRELS, TUMBLING
*Royersford Foundry & Machine Co.

BARROWS, CHARGING
The Akron Cultivator & Mfg. Co.

BEARINGS, BRONZE
*Lumen Bearing Co.

BEARINGS, ROLLER
*"The Reeves"—Reeves Pulley Co.
*Royersford Foundry & Machine Co.

BEARINGS, SHAFT
*Bond Foundry & Machine Co.
*Dodge Sales & Engineering Co.
*The Hill Clutch Co.
*W. A. Jones Foundry & Machine Co.
*Medart Patent Pulley Co.
*Royersford Foundry & Machine Co.
*Valley Iron Works.

BELT DRESSING
*Alexander Brothers.
*"Beltex"—Chicago Belting Co.
*Chicago Rawhide Mfg. Co.
*"Ease-On"—Mount Vernon Belting Co.
Gandy Belting Co., The
*Graton & Knight Mfg. Co., The
Jos. C. Paulus & Co.
*Chas. A. Schieren Co.

BELT FASTENERS
Crescent Belt Fastener Co.
*Flexible Steel Lacing Co.
*Clipper Belt Lacer Co.

BELT LACINGS, LEATHER
*Alexander Brothers.
*Chicago Belting Co.
*Chicago Rawhide Mfg. Co.
*"Cocheco"—I. B. Williams & Sons.
*Graton & Knight Mfg. Co.

BELT LACINGS, METALLIC
*Clipper Belt Lacer Co.
Crescent Belt Fastener Co.
*Flexible Steel Lacing Co.

BELT TIGHTENERS
*Dodge Sales & Engineering Co.
*The Hill Clutch Co.
*Medart Patent Pulley Co.
*George W. Pyott Co.
*Valley Iron Works.
*T. B. Wood's Sons Co.

BELTING, BALATA
Dominion Asbestos & Rubber Corp.
*Victor Balata & Textile Belting Co.

BELTING, CANVAS STITCHED
Carton Belting Co.
Dominion Asbestos & Rubber Corp.
"Gandy"—The Gandy Belting Co.
*Hettrick Mfg. Co., The.
*Mount Vernon Belting Co.
Jos. C. Paulus & Co.
*Victor Balata & Textile Belting Co.

BELTING, CONVEYOR
Buffalo Weaving & Belting Co.
Dominion Asbestos & Rubber Corp.
Gandy Belting Co.
*Hettrick Mfg. Co., The.
*Mount Vernon Belting Co.
*New York Belting & Packing Co.
"Rusco"—The Russell Mfg. Co.
*"Stanley"—Stanley Belting Corp.
*United States Rubber Company.
*Victor Balata & Textile Belting Co.

BELTING, COTTON, SOLID WOVEN
Buffalo Weaving & Belting Co.
*"Burmaline," "Alfalfa"—Burrell Belting Co.
"Rusco"—The Russell Mfg. Co.
*"Stanley"—Stanley Belting Corp.
*Victor Balata & Textile Belting Co.

BELTING, LEATHER
*Alexander Bros.
Charlotte Leather Belting Co.
*Chicago Belting Co.
*Chicago Rawhide Mfg. Co.
*Graton & Knight Mfg. Co., The
*"Jewell"—Jewell Belting Co.
*New York Leather Belting Co.
Jos. C. Paulus & Co.
Philadelphia Belting Co.
Rose Valley Shops.
*Chas. A. Schieren Co.
*"Shield"—McCauley Belting Co.
"Sterling"—Chas. Bond & Co., Philadelphia
*I. B. Williams & Sons.

BELTING, LINK
H. W. Caldwell & Son Co.
Howe Chain Company.
*The Jeffrey Mfg. Co.
*Chas. A. Schieren Co.

BELTING, ROUND
*Alexander Brothers.
*Chicago Belting Co.
*Chicago Rawhide Mfg. Co.
*Graton & Knight Mfg. Co., The.
*Jewell Belting Co.
*New York Leather Belting Co.
*Chas. A. Schieren Co.
*I. B. Williams & Sons.

BELTING, RUBBER
*The Diamond Rubber Co., Inc.
Dominion Asbestos & Rubber Corp.
Empire Rubber & Tire Co.
*The B. F. Goodrich Co.
*New York Belting & Packing Co.
"R. F. & C."—Buffalo Weaving & Belting Co.
*United States Rubber Company.

BELTING, THRESHER
Gandy Belting Co.
*Hettrick Mfg. Co., The.
*Mount Vernon Belting Co.
*New York Belting & Packing Co.
*I. B. Williams & Son.
*Victor Balata & Textile Belting Co.

BELTING, TWISTED
*Alexander Brothers.
*Chicago Rawhide Mfg. Co.
*Graton & Knight Mfg. Co.

BELTING, WATERPROOF
*Alexander Dreadnaught—Alexander Bros.
*Charlotte Leather Belting Co.
*Chicago Belting Co.
*Chicago Rawhide Mfg. Co.
"Graton & Knight Mfg. Co., The.
*Hettrick Mfg. Co., The
*"Marine"—McCauley Belting Co.
*New York Leather Belting Co.
Philadelphia Belting Co.
"Rusco"—The Russell Mfg. Co.
*Chas. A. Schieren Co.
*I. B. Williams & Sons.
*Victor Balata & Textile Belting Co.

BELTS, BAND
The Russell Mfg. Co.

BELTS, MERCHANDISE CONVEYING
"Rusco"—The Russell Mfg. Co.

BELTS, POLISHING
The Russell Mfg. Co.

BELTS, WELL DRILLING
*Hettrick Mfg. Co., The.

BITS, AUGER
"Pexto"—The Peck, Stow & Wilcox Co.

BITS, EXPANSIVE
"Pexto"—The Peck, Stow & Wilcox Co.

BLOCKS, CHAIN
*The Chisholm-Moore Mfg. Co.
*"Wright"—Wright Mfg. Co.
*Yale & Towne Mfg. Co.

BLOCKS, PILLOW
*Bond Foundry & Machine Co.
Chain Belt Company.
Chicago Pulley & Shafting Co.
*Dodge Sales & Engineering Co.
*The Hill Clutch Co.
*Jeffrey Mfg. Co., The.
*W. A. Jones Foundry & Machine Co.
*Medart Patent Pulley Co.
The Carlyle Johnson Machine Co.
*Royersford Foundry & Machine Co.
*Standard Pressed Steel Co.
*Valley Iron Works.

BOARD, FRICTION
W. O. Davey & Sons.

BOILERS, RANGE, GALVANIZED
W. B. Scaife & Sons Co.

BOLT CUTTERS
*H. K. Porter—"Easy," "New Easy," "Allen-Randall."

BOLTS, EYE
*J. H. Williams & Co.

BOLTS, NUTS AND SCREWS
*Standard Pressed Steel Co.

BRACES, BIT
"Pexto"—The Peck, Stow & Wilcox Co.

BRACKETS, ELECTRICAL CONSTRUCTION
Illinois Malleable Iron Co.

BRACKETS, WALL
*Bond Foundry & Machine Co.
*The Hill Clutch Co.
*Medart Patent Pulley Co.
*Valley Iron Works.

BRAKE LINING
Dominion Asbestos & Rubber Corp.
*General Asbestos & Rubber Co.
"Rusco"—The Russell Mfg. Co.

BRASS GOODS, STEAM
*American Injector Co.
Crane Co.
Detroit Brass & Malleable Works.
*The Lunkenheimer Co.
*McRae & Roberts Co.
*Michigan Lubricator Co.
*The Wm. Powell Co.
*Sterling & Skinner Mfg. Co.
*The D. T. Williams Valve Co.

BRONZE BUSHINGS AND BARS
*Lumen Bearing Co.

BROOMS, FACTORY, WAREHOUSE AND RAILROAD
*Indianapolis Brush & Broom Mfg. Co.
*The Osborn Mfg. Co.

BRUSHES, FLUE AND HEATER
*The Osborn Mfg. Co.

BUCKETS, ELEVATOR
W. H. Caldwell & Son Co.
Howe Chain Company.
*The Jeffrey Mfg. Co.
*W. A. Jones Fdy. & Machine Co.

BUILDERS' HARDWARE
Peck, Stow & Wilcox Co.

BUSHINGS, RING OILING
Brown Engineering Co.

CAR-MOVERS
*Appleton Car-Mover Co.

CAR WRENCHES
Safety Wrench & Appliance Co.

CARTS, CONCRETE
The Akron Cultivator & Mfg. Co.

CASING, WELL
National Tube Co.

CASTINGS, BRASS, BRONZE AND ALUMINUM
*Lumen Bearing Co.

CASTINGS, GRAY AND MALLEABLE
Detroit Brass & Malleable Works.
*The Hill Clutch Co.
Illinois Malleable Iron Co.
*The Jeffrey Mfg. Co.

CEMENT, LEATHER BELT
*Alexander Brothers.
*Chicago Belting Co.
*Chicago Rawhide Mfg. Co.
*Cocheco—I. B. Williams & Sons.
*Graton & Knight Mfg. Co., The.
*Chas. A. Schieren Co.

CHAIN BELTS
H. W. Caldwell & Son Co.
Howe Chain Company.
*The Jeffrey Mfg. Co.
*W. A. Jones Foundry & Machine Co.

CHAIN, COIL, CONVEYOR, DREDGE, LOADING, LOGGING, ETC.
Howe Chain Company.
*The Jeffrey Mfg. Co.

CHISELS, CARPENTERS'
"Pexto"—The Peck, Stow & Wilcox Co.

CHUCKS, DRILLS
*E. Horton & Son Co.
*Detroit Twist Drill Co.

CHUCKS, LATHE
*E. Horton & Son Co.
*"Sweetland"—The Hoggson & Pettis Mfg. Co.

CLAMPS, BELT
*T. B. Wood's Sons Co.

CLAMPS, "C"
Machinists' and Toolmakers'
*Armstrong Bros. Tool Co.
*"Vulcan"—J. H. Williams & Co.

CLIPPERS, BOLT
*H. K. Porter.

CLOCKS, WATCHMAN'S PORTABLE
Hardinge Brothers, Inc.
Newman Clock Co.

CLOSETS, FROST PROOF
Jos. A. Vogel Co.

CLUTCH FACING
Dominion Asbestos & Rubber Corp.
"Rusco"—The Russell Mfg. Co.

CLUTCHES, FRICTION
H. W. Caldwell & Sons Co.
Chicago Pulley & Shafting Co.
*Dodge Sales & Engineering Co.
Edgemont Machine Co., The.
*The Hill Clutch Co.
*"Lemley"—W. A. Jones Fdy. & Mach. Co.
*Medart Patent Pulley Co.
*The Moore & White Co.
"Mule Pull"—Brown Engineering Co.
*Geo. W. Pyott Co.
*"The Reeves"—Reeves Pulley Co.
*Valley Iron Works.
*T. B. Wood's Sons Co.

COCKS, AIR
*American Injector Co.
Crane Co.
Detroit Brass & Malleable Works.
*The Lunkenheimer Co.
*McRae & Roberts Co.
*Michigan Lubricator Co.
*The Wm. Powell Co.
*The Sterling & Skinner Mfg. Co.
*The D. T. Williams Valve Co.

COCKS, BALL
*Detroit Lubricator Co.
*McRae & Roberts Co.
*The Sterling Skinner Mfg. Co.

COCKS, CORPORATION
Crane Co.
*The Lunkenheimer Co.
*The Wm. Powell Co.

COCKS, GAUGE
*American Injector Co.
Crane Co.
*Jenkins Bros.
*The Lunkenheimer Co.
*Michigan Lubricator Co.
*"Ohio"—The Ohio Brass Co.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

COCKS, STEAM AND SERVICE
Crane Co.
Detroit Brass & Malleable Works.
*The Lunkenheimer Co.
*McRae & Roberts Co.
*The Wm. Powell Co.
*The D. T. Williams Valve Co.

COLLARS, SHAFT
*Bond Foundry & Machine Co.
Chicago Pulley & Shafting Co.
*Dodge Sales & Engineering Co.
*Jeffrey Mfg. Co., The
*W. A. Jones Foundry & Machine Co.
*Medart Patent Pulley Co.
*Royersford Foundry & Machine Co.
Safety First Mfg. Co.
*Standard Pressed Steel Co.
*Valley Iron Works.
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*The Hill Clutch Co.
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*Royersford Foundry & Machine Co.
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Smith & Serrell.

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*The Hill Clutch Co.
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*The Yale & Towne Mfg. Co.

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Crane Co.
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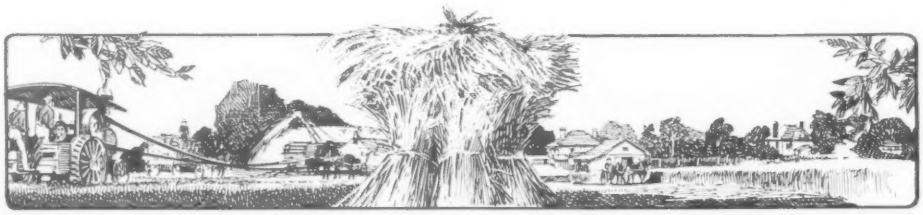

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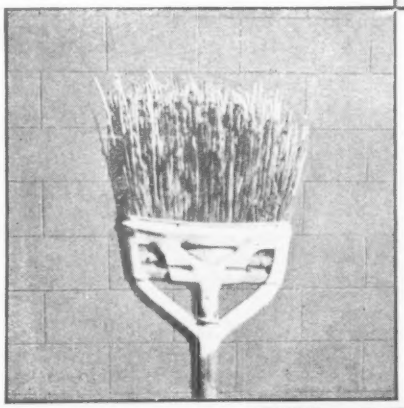

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Empire Tire & Rubber Corp.
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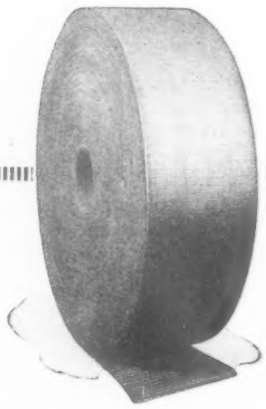

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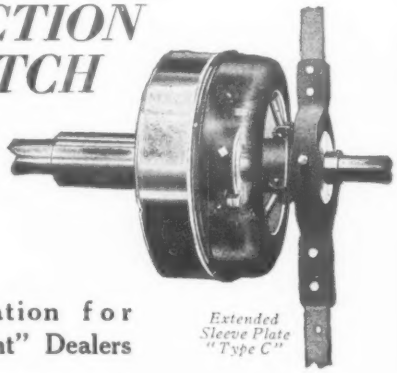

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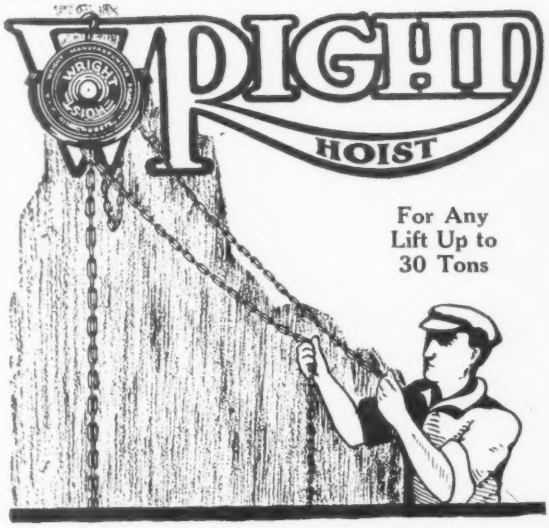

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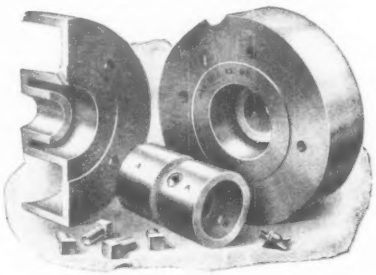

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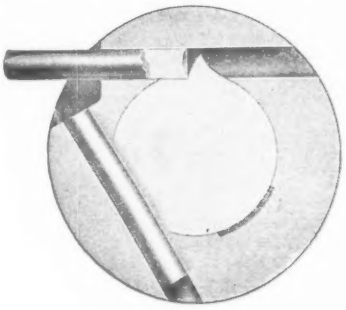

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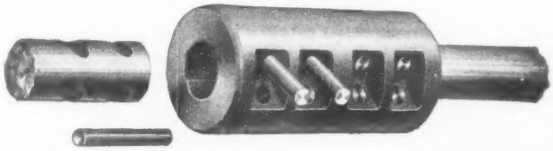

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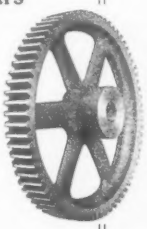

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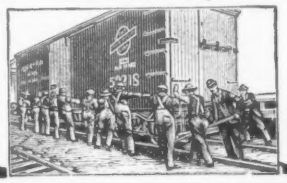

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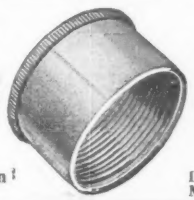

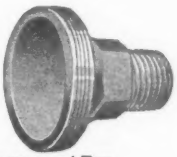

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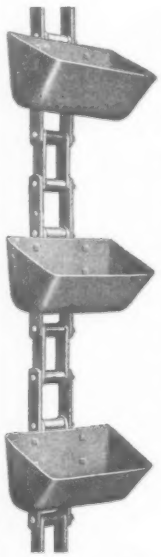
Howe Double-locked Combination



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A development of the old type combination chains, which for years have been constructed with the rivets flattened at one end only to lock them to the side links.

Our improved design embodies the DOUBLE-LOCKED pin — machined flat at both ends, driven tight into machined holes in the side links—actually integral with the side links. Pins cannot work loose and wear in the side links. All wear distributed over a large area between pin and barrel of center link—elongation is minimized.

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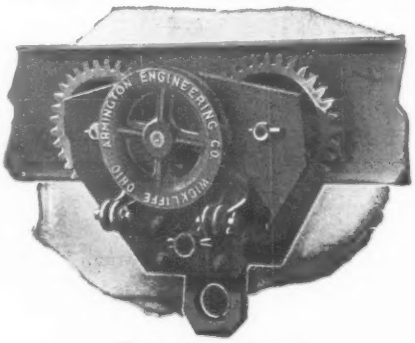

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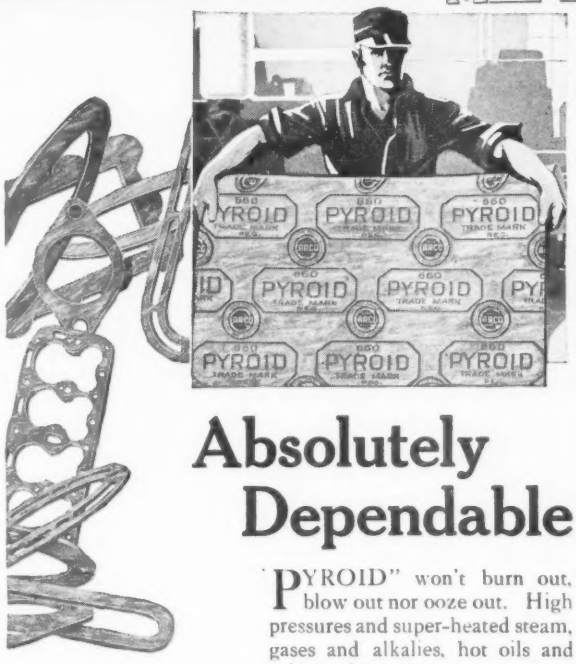

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"PYROID" won't burn out, blow out nor ooze out. High pressures and super-heated steam, gases and alkalies, hot oils and acids, cold and hot water, have no appreciable effect upon it. Gaskets made with "Pyroid" can be used repeatedly.

That's practically "claiming everything". But "Pyroid" must make good on every claim, and especially on the broad general claim that it is the toughest, longest-lasting compressed asbestos sheet packing you can find anywhere.

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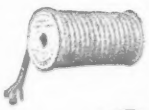
Ready-cut Gaskets. We can make quick deliveries on standard size gaskets cut from "Pyroid". Special gaskets cut to specifications and orders promptly executed.

Consult your jobber; or write to our nearest office.

"Dixie" (No. 210) High Pressure Packing

"Perfect Adjustable" Gasket Tape



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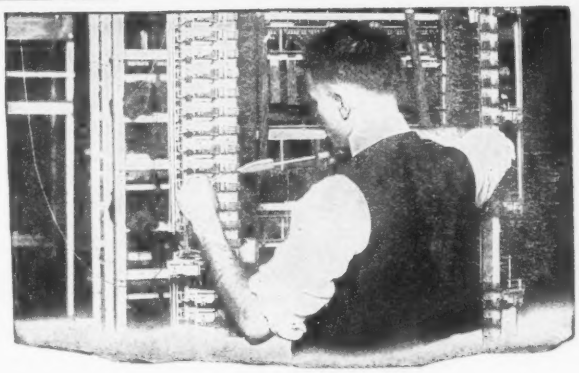

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saves time, labor, and money because it is a wire of solder with a core of acid flux. This core is divided into pockets and each pocket holds just enough flux for the surrounding solder. Any inexperienced man can do perfect work with this solder.

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Comes in one pound coils and on one, five, and ten pound spools.

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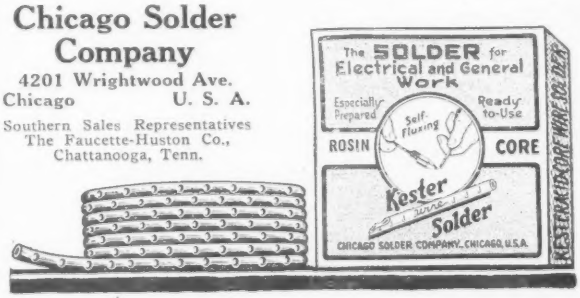

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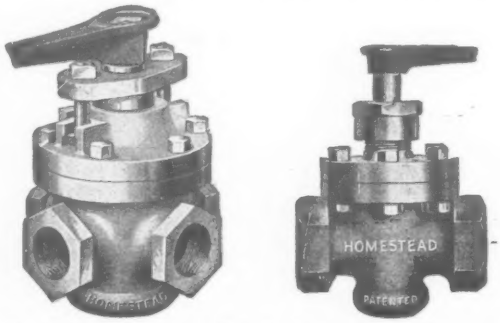

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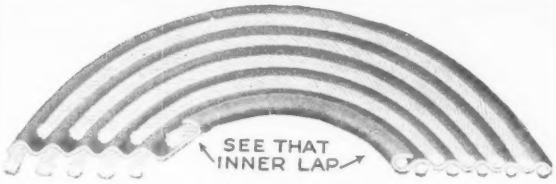

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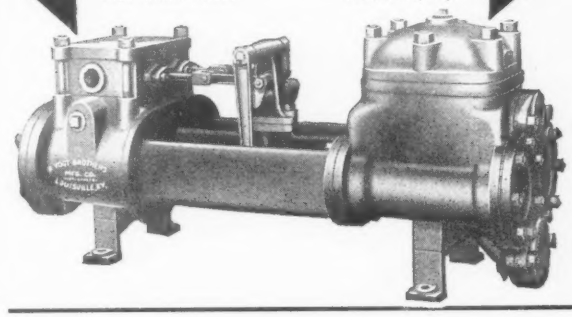

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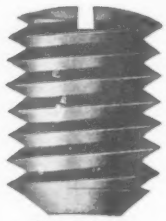

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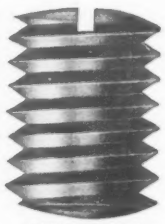

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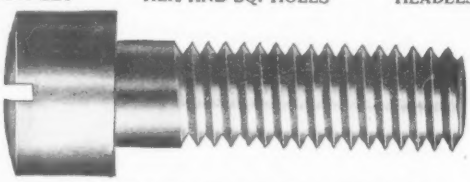

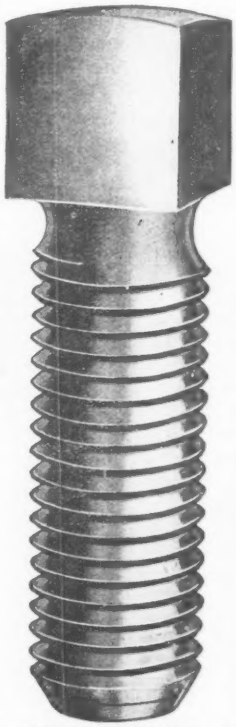

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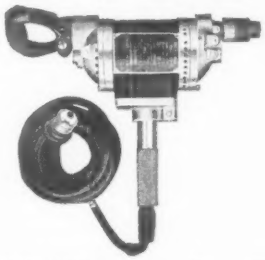

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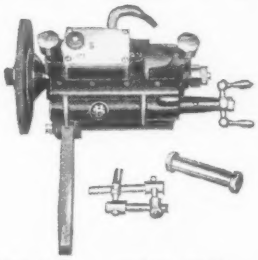

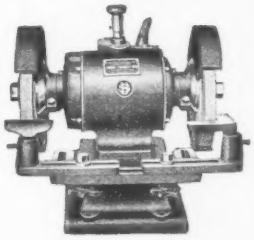

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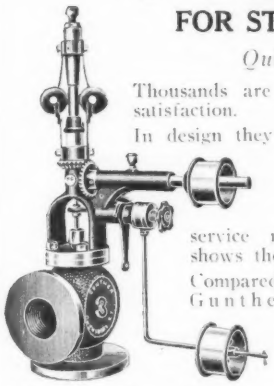

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OWENSBORO, KENTUCKY
Established 1880

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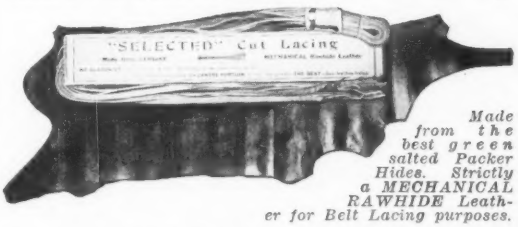
THE L. S. STARRETT COMPANY
The World's Greatest Toolmakers
Manufacturers of Hack Saws Unexcelled
ATHOL, MASS.

42-81

Starrett Hack Saws

"Chicago Rawhide" Lace Leather and Cut Lacing



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"CHICAGO RAWHIDE" Lace Leather and Cut Lacing will give double the service of the ordinary chemical rawhide or surface tanned leather.

OUR PRODUCTS

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If made of leather for mechanical purposes, we make it.

Write for Dealer's Terms

The Chicago Rawhide Mfg. Co.
1301 Elston Ave., Chicago
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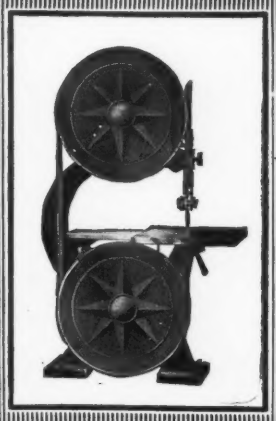
127 Broad Street, Boston



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96 Columbia Street **LEETONIA, O.**

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